Computing

Courses at the University of Plymouth
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Welcome to a very exciting opportunity. Over the next decade, the IT industry is predicted to grow 5-8 times faster than the UK average, and universities are only producing around 10% of the graduates that are needed to satisfy the demand. Without a doubt, computing is a prosperous area, with the potential to offer a similarly prosperous future for those involved. However, you don’t need me to tell you the importance of computing – you obviously know this because you’re reading this brochure! So, let me instead tell you a little about what we can offer if you choose to join us here at the University of Plymouth.

Our courses are geared towards equipping you with the knowledge and skills that industry wants, and for which we know there is high demand. We offer an excellent range of general and topic-focused courses, all of which offer strong employment prospects. Our School maintains strong links with industry, which not only helps to inform our course content and ensure that it is relevant, but also assists in providing industrial placements and graduate employment opportunities. Many of our topics are underpinned by leading-edge research, and delivered by academic staff that are internationally renowned within their fields. A further advantage is provided by our extensive laboratory facilities, which enable us to offer you practical, hands-on experience in a whole range of computing technologies, including networking, software development, security and multimedia.

Another factor of note is that many of our courses are accredited by the British Computer Society (BCS), the professional body for IT in the UK, which enables graduates to become members of the Society and progress towards Chartered IT Professional (CITP) status – the ‘gold standard’ credential for practitioners in our industry.

A successful computing graduate from Plymouth is extremely capable and highly employable, and we would be delighted if you came to join us.

Prof. Steven Furnell, Head of School of Computing, Communications and Electronics
Ten great reasons to study Computing at Plymouth

“The University is fun... its teaching assessments have been consistently good if not amazing.”
Virgin 2005 Alternative Guide to British Universities

“Teaching is of high quality. It is the only university in the UK to gain nine national teaching fellowships.”
Times Online September 23rd, 2007

“One of the top 25% of universities nationally, for the IT and Computer Science subject area.”
Guardian University League Tables, 2008

1. A degree course focusing on career development from the first day.
2. Develop business and professional skills alongside technical ones to ensure outstanding career prospects.
3. Access state-of-the-art labs and software for the most up-to-date skills.
4. The Placement Year - we help you to start your career.
5. The opportunity to achieve a full honours degree in two years.
6. Teaching from world class researchers in their field.
7. Achieve professional accreditation and certification as well as academic qualifications.
8. Areas of specialism such as hacking/security, games and networking.
9. Work with employers during your degree to understand what they look for in graduates.
10. Friendly, accessible, professional staff.
The IT Sector

Imagine a world without computers and networks. How would businesses operate? How would we communicate? Computers and networks provide the infrastructure for worldwide information communication - from multinational organisations exchanging financial information to allow them to predict the next year’s markets, through telecommunication companies routing billions of text messages every month, to an individual updating their profile on a social network. Computing, Computer Science and Information and Communications Technology (ICT) are all interrelated disciplines that make all of this happen:

- the networking infrastructure and protocols to enable real-time communication between millions of devices around the world in a secure manner;
- the hardware and operating systems that allow information to be stored and retrieved;
- the servers that hold massive amounts of information in document stores and databases;
- the software to allow for the manipulation of this information;
- the software making use of the networks, operating systems and hardware to provide rich, interactive entertainment experiences;
- the business and management skills to ensure the technology does what is required.

Computing encompasses all of the above. It is a broad and ever-changing subject that needs to be responsive to technological advances and the manner in which business and society adopts them. Demand in the sector has never been higher and careers in the industry reflect the breadth of the discipline, with professionals operating across the sector with roles such as Network Engineering and Managers, Security Analysts, Software Developers, Business Analysts, System Administrators and Project Managers.

Working in the Computing Industry

“The UK faces an acute and growing shortage of high-end software skills”
Microsoft

“The market is growing and the numbers of people enjoying good careers in the IT industry is at all time high”
Hewlett Packard

“The ICT sector continues to grow 5-8 times faster than any other industry in the UK”
eSkills UK

“The ICT sector is the fastest growing area of the European economy”
IDC
Our degree courses are all industrially focussed - we are aware that most of our graduates aim to work within the sector and we invest time and effort in making sure our students have the information and exposure to the industry necessary to ensure a great career.

Our work with employers is multi-faceted:

- An employer liaison group, comprising of regional employers such as the Met Office, Land Registry, Babcock Marine, Goss Interactive and TwoFour Media provides constant input into the development of our courses and the recruitment of our graduates;
- We have long-standing relationships with many national companies (for example IBM, Syngenta, Logica, Intel, GlaxoSmithKline and Oracle) who have recruited our students over many years. Placement visits by School staff allow them to see the latest developments in the sector;
- Guest lectures and career workshops with employers are a regular feature across our courses;
- Employer involvement is embedded in a number of subjects within the degrees (such as IT management, networking and security) providing work based opportunities for students during their degrees.
Paid Work Placements

There are a number of facets of our courses that contribute to career development and one of the most important is the placement year. All of our Computing courses provide the opportunity to do a work placement. In some cases it is a mandatory element of the degree.

Taking place between the second and final stages of a degree course, students work in a company for a 48 week placement. The placement provides a wonderful opportunity to embed skills and knowledge developed during the first two stages of the degree, to develop new skills in a real world setting, and to gain excellent exposure to the industry in order to better inform career choices. Most importantly it gives you a well paid year’s experience in the sector, something that employers rate extremely highly when recruiting.

Placement opportunities can take place locally, nationally or, in some cases, internationally. We have students placed at companies such as Oracle, Intel, IBM, Microsoft and HP as well as many smaller companies.

Our placements office helps find the placement company and aids the recruitment process. Once in placement students are visited regularly to make sure everything is going well.

In a sector where demand for quality graduates is high, many employers use the placement as a valuable means of assessing employees, and many will make post-graduation job offers at the end of the placement year. Some companies also offer sponsorship of a student’s final year.

A commitment to your career

Tony Chellew
BSc (Hons) Computing Informatics

Tony Chellew spent a year on work placement with Lockheed Martin. His work included a project for the MoD with the Enterprise Architecture team. Aided by the technical knowledge he developed over the first two years of his degree, along with guidance from his technical mentor within the company, Tony was regarded as an indispensable member of the team.

He became expert in utilising the application interface of the database and architecture software and helped the team get the most out of that data to further improve the design process. Tony became such an important member of the team that the company sent him to the USA to aid in training other Lockheed Martin employees on the software’s interfaces and to demonstrate the project’s current capability.

Tony sees the placement as a crucial part of his degree education. “Real world experience is what employers are looking for. It helps to make your CV stand out. My placement gave me real experience as well as a company on my CV which stands out internationally as a world class employer. I didn’t feel I was treated as a student and my colleagues often asked me questions on the various subjects I had been taught at university. I was also supported by an experienced team and had the opportunity to learn new skills which I was able to take into my final year.”
**Accreditation and Chartership**

The British Computer Society (BCS) is the leading professional body for people working in IT. It has over 60,000 members and sets the standards for IT professional practice in the UK. The BCS accreditation means that the organisation recognises the quality of our degree courses and their fit with the demands of the UK IT industry.

Achieving an accredited degree provides an opportunity to become a Member of the Institution and to gain accelerated progress to chartered status within the profession, either as a Chartered IT Professional (CITP) - the ‘gold standard’ for IT professionals in the UK, or the more general Chatertered Engineer (CEng), validated via the BCS by the Engineering Council.

In an industry where professional accountability is becoming increasingly important, membership and chartered status by the leading body for the sector in the UK is another important step for career development.

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**Professional Academies**

The School of Computing, Communications and Electronics is proud to be a recognised academy by two of the world’s leading IT companies.

We were established as a Cisco Regional and Local Academy in September 2006, selected in part due to Cisco’s appreciation of the quality of previous networking graduates from the University.

Students within the School of Computing, Communications and Electronics doing our networking courses are able to achieve CCNA professional certification - the industry standard for networking professionals - alongside their degree qualification.

The School is a member of the Oracle Academy – Oracle is the leading provider of database and information management software in the world. This enables us to provide access to the latest Oracle software to develop up-to-the-minute skills on its database products.

In addition, at the time of writing, we are the only university in the country to offer education in Oracle’s text and multimedia retrieval technologies, used in the search engines of companies such as Motorola and World Bank.
ICT as a profession is still very young. The first computers were put to industrial use less than 60 years ago, which means we have a lot of ground to make up on established professions such as medicine, law or accountancy.

However, it is only in the last 20 years that we are beginning to realise that technology (computers and networks) is not the only facet of the profession. While it is an essential part, it is the I in ICT that is the most important - information. The ICT sector exists because people want information, whether that be a Chief Executive of a company wishing to find out the project sales figures for the next financial quarter or a teenager playing Call of Duty with someone on the other side of the world they have never met.

Information can take many forms - reports, graphs, webpages, and virtual environments and stored in many different ways.

ICT is the foundation upon which all of these information needs are fulfilled and provides the means to access and transform information into a usable form. ICT professionals have the skills to make sure the technology fulfils what is required in an efficient, user friendly manner.

The ICT sector is aware they don’t always get it right, and this generally happens when the needs of the client are not understood. Therefore, while technical skills are crucial to the ICT professional, so are communication and interpersonal interaction.

A drive within the sector in recent years has called for “hybrid skills” - individuals who are technically talented but understand that unless needs are understood, technology is useless. However, the underlying technology is constantly changing and there is still demand for technical specialists who can understand how new technologies might be used by business or society.


"Information and Communication Technology (ICT) are at the heart of the global economy and provide a key source of competitiveness for all sectors, opening new markets, increasing performance and driving productivity”

eSkills UK, 2008

What does an IT professional do?

The Changing Nature of the Sector
Typical jobs in the sector

**Software Developer** - someone involved in the implementation of new software systems within an organisation with appropriate programming skills to ensure the realisation of a piece of software from specification to finished product.

**Business Analyst** - an individual who will work between the technical developers and clients. They will analyse client needs by talking through their requirements and develop specifications which are passed to developers to implement with appropriate hardware and software technologies.

**Project Manager** - a Project Manager will oversee a development project, generally managing a team of developers to make sure there are appropriate resources to ensure the project is delivered on time and on budget. A Project Manager may also liaise with clients to ensure everything is on schedule.

**System Administrator** - someone who looks after the computers and networks in an organisation, making sure everything functions correctly. Jobs might involve things such as installing, configuring and maintaining servers, troubleshooting problems and ensuring everything is regularly updated.

**Security Administrator** - a specialist type of System Administrator, ensures that an organisation’s ICT is secure and protected from internal and external attack. Responsibilities include user management and access control, configuring security systems and network monitoring to detect attacks.

**IT Manager** - a senior role within an IT department, the IT manager will be responsible for overseeing the operation of all IT resources within a company to make sure it is performing and delivering to company strategy. The IT Manager will generally work with clients and other departments within an organisation to advise on whether company strategy can be achieved by its IT infrastructure.
I loved everything about my time at the University of Plymouth – from the learning to the social life. The Computing Informatics course is a highly professional course and really prepares you for the real world of IT.

Initially I chose the BSc (Hons) Computing Informatics course because I was looking for a degree that would lead to a good career. I can honestly say it’s the best choice I ever made and I would recommend it to anyone.

The work placement year with the Land Registry was invaluable. Having never worked in the industry before I was really nervous but found I absolutely loved it. Everyone was very helpful, I was given lots of training and, as a result of my placement I was offered a job there.

As Software Developer for the Land Registry I have a great job full of variety and with lots of opportunities. My job includes web application development, support and maintenance of the Land Registry’s live computer systems as well as a lot of data migration work. This involves the transfer of data from one system to another and sees me travelling throughout the UK, communicating with large numbers of people.

“Without Plymouth Uni I wouldn’t be where I am today!” Andrew McIntyre

“The programming skills acquired from the helpful staff at Plymouth University have provided an excellent foundation on which to build as a Software Developer at IS.”

Neil Butler

Donna Daykin
Software Developer, Land Registry

The Land Registry Information Systems Department, which provides the IT to support the whole of the Land Registry operations, is based in Plymouth and we enjoy a strong relationship with the department going back many years. Information Systems regularly employ our students in both placement and permanent positions, and there are approximately 40 University of Plymouth students and graduates working there at any one time.

John Wright, Director of IT at ISS says:

Recent graduates
The course at Plymouth gave me both the business and technical skills I needed for my chosen career path. Indeed, the main reason I chose to study this degree was because it offered a good combination of business and technical teaching.

The placement year was easily the best thing about my course, providing a real-life example of how to apply what I had learnt. I spent a year at Intel working as an IT Business Analyst. I can’t emphasise enough how useful it was for my final year and for my job prospects.

Since leaving the University I have been working as a project-based Microsoft specialist providing technical consultancy and skills to businesses that are planning, developing or deploying Hewlett Packard Microsoft solutions. I have been working on various technologies including Windows Server 2008, SharePoint Server 2007, Windows Vista and Office 2007.

It is a great company to work for, I am learning huge amounts every day, with lots of project variation, working with cutting edge technology and earning a good salary with benefits.
The School of Computing, Communications and Electronics

Research activity

The School of Computing, Communications and Electronics comprises of approximately 60 academic staff whose subject specialisms have a breadth ranging from human factors in computing, to video compression algorithms. Most staff are either industrially or research active, many having worked in industry for companies such as IBM, Symantec and France Telecom. Our staff also carry out consultancy work for other large national and international companies.

In the last research assessment Computing was awarded 5, denoting work of international excellence.

While research exists in areas from Digital Arts to Data Storage Technologies, two areas of particular strength relevant to our Computing courses are Security and Networks, and Artificial Intelligence and Robotics.

Our research in security aims to improve protection against online attacks, such as hackers and viruses, as well as providing safeguards against other threats to systems and the people that use them. The other area of focus within this research area relates to the network technologies that support online applications and services. Our work here includes approaches to enhance the performance of the network, optimising the communicated data and the quality of service delivered to users.

Research in Artificial Intelligence and Robotics often involves computer simulations that provide virtual realities for simulated agents, addressing a number of issues in complex adaptive systems, such as cognition, origins of language and evolution of music.

In addition, the application of such techniques to robotics is a key research area - we are current national robot football champions!
**Information Security**

The risks and challenges posed by remote access and mobile working was one of the key issues addressed by 2007’s Infosecurity Europe conference at Olympia in London.

Contributing to this theme was Steven Furnell, Professor of Information Systems Security at the University of Plymouth, who was invited to participate in a keynote panel session entitled “Are You Even Remotely Secure?”.

One of the key points identified in Prof. Furnell’s talk was that mobile devices (such as smartphones and PDAs) have assumed an increased importance in business life, and now routinely hold a variety of sensitive information. However, this has not necessarily been accompanied by a corresponding increase in the security that we apply to them, with the consequence that valuable data is travelling around unprotected. Indeed, research that has been conducted at Plymouth has revealed that many users do not perceive a risk to their devices, or recognise the potential value of the data they contain.

One of the notable areas in which protection is often lacking is when someone gets access to the device in the first place, because users elect not to enable the authentication features. The Plymouth research has suggested a variety of problems with existing PIN-based method, including the fact that many consider it inconvenient and do not see the value of using it. Prof. Furnell’s talk highlighted a number of results in these respects, and looked towards the possibility of using biometric techniques as an alternative on the devices.

**Cognitive Robotics Research**

A consortium led by the University of Plymouth, including partners from across Europe has beaten competition from 31 others to win a £4.7-million grant for the ITALK (Integration and Transfer of Action and Language Knowledge in Robots) project, which begins on 1 March 2008. The four-year project - the first of its kind in the world - will see delivery of the 1m-high baby humanoid robot ‘iCub’ to the University, which is a world leader in cognitive robotics research.

ITALK aims to teach the robot to speak by employing the same methods used by parents to teach their children. The university’s robotics experts will work with specialists in language development who have researched the ways parents teach their children to speak. They will then conduct experiments in human and robot language interaction. Typical experiments with the iCub robot will include activities such as inserting objects of various shapes into the corresponding holes in a box, serialising nested cups and stacking wooden blocks. Next, the iCub will be asked to name objects and actions so that it acquires basic phrases such as “robot puts stick on cube”.

The scientific and technological research developed during the project will have a significant impact on the future generation of interactive robotic systems within the next ten years and the leadership role of Europe in this area.
The University has a compact campus right in the heart of the city, so everything is just a few minutes walk away, including shops, bus and rail stations. It is very student orientated. The city is the largest on the south coast of England with a population of 240,000. Plymouth is in a popular tourist destination, so there are lots of restaurants, cafes, cinemas, theatres and nightclubs plus around 200 pubs and wine bars.

Plymouth is situated on the beautiful south Devon coast with miles of stunning beaches and coastal paths. There are unparalleled opportunities for walking, surfing, sailing, windsurfing, swimming and scuba diving. Plymouth is the only UK university with its own dedicated diving and marine centre. Although Plymouth specialises in water sports, all the normal land-based sports are catered for as well. Dartmoor National Park starts at the edge of Plymouth giving you 365 square miles of open moorland for walking, biking, climbing and horse riding.

The Students’ Union

The Students’ Union is run by students for students. It organises bands, comedy shows and club nights. It has around 100 clubs and societies catering for all tastes and cultures including, for example, skydiving, music & choral societies, conservation volunteers and the Overseas Students’ Society. It also provides financial advice, insurance services, legal advice, child care facilities plus subsidised bars, shops and laundrettes.

“Plymouth was the best choice I could have made. The location is perfect for study and enjoyment.”

Emma Broad, Graduate
Excellent Support Services

- **The Accommodation Service** helps all new students to find somewhere suitable to live, either in halls of residence or elsewhere.

- **The Women in Technology Network** (WiTNet) is a support network for all female technology students. Led by students, and supported by staff, WiTNet helps women get the most from their studies.

- **The Learning Development Service** helps with such things as coping with study and stress, time management and exam technique.

- **Disability Assist Services** offers advice and support, including exam support for students with dyslexia and advice on how to obtain grants to buy specialist equipment.

- **The Careers Service** helps you find work, and provides advice on writing CVs and interviews.

- **The International Office** gives friendly expert advice on travel arrangements, financial matters, immigration regulations, entry visas and information on social and cultural events in Plymouth. See: [www.plymouth.ac.uk/international](http://www.plymouth.ac.uk/international)

- **The English Language Support Centre** for international students provides a free, friendly assessment service. Individual tuition is available free of charge.

- We have excellent child care facilities centred around a brand new £1 million nursery.

- Personal counselling is available from either the University’s or the Students’ Union counselling office.

- The Chaplaincy provides friendship and practical help, regardless of religious belief or background.

- **The University’s library**
The University of Plymouth is one of the UK’s most prominent and dynamic universities with an educational history dating back to 1862. It is consistently ranked as one of the best modern universities.

We currently have students from over 100 different countries who are attracted to Plymouth by its reputation for teaching and research as well as the opportunity to experience one of the most beautiful regions of the UK.

The University is investing over £200 million in facilities designed to take it further towards its stated mission of delivering teaching and research to world-class standards. This includes £850,000 on a new fitness complex (which is about to be extended), £110,000 on new boats for the Diving Centre, £8.3 million to refurbish the engineering and science buildings, £8 million for the new library extension and about £96 million on new buildings.

Plymouth’s reputation for teaching was further enhanced in 2005 when, despite fierce competition from other universities, we were awarded £18 million from the government to establish four Centres of Excellence in Teaching and Learning. Only one other university has achieved such success. One of the centre’s themes is Education for Sustainable Development.
The University’s Accommodation Office undertakes to find everyone somewhere suitable to live, either in a hall of residence or a rented privately owned house or flat. Plymouth has an abundance of good quality, affordable accommodation close to the University and the city centre – see www.plymouth.ac.uk/accommodation and www.unite-students.com.

The University’s halls of residence are new, purpose built and within a few minutes walk of the campus, the shops and the city centre.

Three new blocks of student flats have just been built by private companies in partnership with the University. These are managed by the University.

Our Accommodation Office regularly inspects privately owned houses and flats to ensure high standards of safety and good décor. Options range from studio flats to large houses with a group of people sharing. Houses often have communal spaces, car parking and many are now set up for broadband connection.

Our accommodation database also includes properties suitable for families.

The University guarantees to offer accommodation – either in University managed halls or approved housing – to all international students during their first, full year of study.

Good value accommodation is available
While there is great variety within our courses, they all cover what we refer to as “core aspects” in Computing. These are aspects of the sector one would expect anyone with a Computing related degree to hold, and lay the foundations for the development of careers in the industry. These core competencies are:

**Computer Systems:** How computers work, how the hardware and operating system interact and what the various components of a modern computer do.

**Analysis and design:** The process of transforming the requirements for a new IT system into a specification that Software Developers will then use to develop it. Someone with analysis and design skills will determine the information requirements of a project and specify the location and transformation needs.

**Network fundamentals:** How computers communicate, focusing mainly upon Internet Technologies and their use in modern IT systems.

**Databases:** The information sources of IT systems - database skills let you manage the information stores and communicate with them to retrieve the appropriate information to deliver either to users or to a software system.

**Programming:** Writing the software code to implement new aspects of systems, bring information from databases and manipulate the information to the required form, developing the user interfaces for the presentation of that information, etc. A programmer is the person who realises an IT system and delivers the working product.

We have a number of different degree courses that fit into the Computing discipline. These reflect the breadth of the sector. They fall into three core areas:

**General computing courses** - these take a broad view of the sector and generally reside at the technical end of the discipline. These courses provide a broad introduction to the sector and offer plenty of choice in later stages to ensure you can pick a path that suits your career aspirations.

- BSc (Hons) Computer Science
- BSc (Hons) Computing

**Subject specific BSc (Hons) courses** - with these courses we are looking more specifically at career paths within the sector. These are for applicants who are already clear on the area of IT they wish to go into. The types of careers covered within these courses include business computing/analysis, web management, networking and security.

- BSc (Hons) Computer and Information Security
- BSc (Hons) Computer Systems and Networks
- BSc (Hons) Computing and Games
- BSc (Hons) Computing Informatics
- BSc (Hons) Web Applications Development

**2 year fast-track BSc (Hons) courses** - The University of Plymouth is, at the time of writing, the only University in the country to offer two year fast track BSc (Hons) degree courses in the Computing disciplines. These innovative courses enable a student to achieve a full honours degree, with no loss of quality or depth of study in two years. We offer a two year BSc (Hons) course in the general computing area and also more career specific choices.

- BSc (Hons) Computing For Business Applications
- BSc (Hons) Information Systems
- BSc (Hons) Information Technology Management
3 year conventional BSc (Hons)

- Web Applications Development
- Computer and Information Security
- Computer Systems and Networks
- Computing
- Computer Science

2 year fast-track BSc (Hons)

- Information Technology Management
- Information Systems
- Computing for Business Applications
The traditional university term structure breaks the year up into three terms - Autumn, Spring and Summer. The Autumn and Spring terms are teaching terms, and in each you will be doing six subjects, or modules. Some of these modules will last for a single term, while others will run across both. Assessment in Autumn term modules is coursework only, while those running across both terms, or those running in the Spring term only, may have a coursework and examination element. The Summer term is for assessment only, when exams are taken for the year.

Contact time for each subject varies but, on average, you should expect between 2 and 3 hours per module. Modules with a practical element will normally comprise an hour of lecturing then one to two hours in labs developing practical skills. Those with more discursive or theoretical elements will be split between lectures and seminars or small group discussions. In addition, we would expect around 4 hours per module “self study”, where you are developing what has been covered in the lecture theatre, lab and classroom to help your own understanding.

Contact time will generally be greater in the first year, and reduce in subsequent years as you become more focussed upon your own academic and career development.

During the Autumn and Spring terms, 2-year fast-track students have the same workload as 3-year degree students.

2-year fast-track degrees shorten the length of the degree by utilising part of the traditional 4-month summer break. In both summers, tuition is centred around short intensive summer schools in June and July, and project work. At other times during the summer, staff will be available for both electronic and face-to-face tutor support upon request. They will also assist with coursework preparation by reviewing draft coursework assignments, normally by e-mail.

Apart from the requirement to attend summer schools, examinations and submit coursework, students may divide their summer-time between academic work and holidays as they see fit. This allows students the flexibility to spend the bulk of the summer in Plymouth or elsewhere, as they choose.
Conventional degree structure

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Two year fast-track structure

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Our strong relationship with employers and professional bodies is further demonstrated through project and degree prizes. The prizes, awarded to outstanding students within cohorts, allow the best to demonstrate their worth and stand out from the crowd when developing their careers.

Computing courses have two student prizes, one for “Best Final Year Student on BSc (Hons) Computing”, sponsored by Revell Research Systems, and “Best Overall Computing Student”, sponsored by the British Computer Society South West Branch.

In addition, there are two project prizes, awarded for innovation in final stage project work. The first rewards effective software development in a final stage project, and is sponsored by the Institute of Analysts and Programmers. The second, sponsored by local company Goss Interactive, rewards the innovative use of web technologies within a project.

Student prizes

Darren Rees, from South Wales, was awarded the 2007 Revell Research Systems Prize for the Best Final Year Student on the BSc (Hons) Computing programme.

Revell Research Systems, a management and technology consulting practice based in Exeter, but working throughout the United Kingdom, inaugurated the prize at the University in 2006 to mark its 21st year in business.

The practice’s Managing Consultant, Alastair Revell, said: “I am delighted that Darren Rees has been awarded the 2007 prize. I understand from his tutor Dr. Nigel Barlow that he is a very talented student and I would like to wish him the very best as he starts his career in computing.

One of the objectives of the prize is to mark out the best graduate in each year so that they stand out from the crowd and hopefully this will make their start in the professional world easier.”

Darren is currently developing his career in New Zealand.

“I have little doubt that he will have been well prepared for his career while at Plymouth, which is quickly gaining a reputation as an excellent place to study”

Alastair Revell, Revell Research Systems
“We see this initiative as a way to help develop professionalism among those about to enter the industry.”
Mike Ryan, Director General, Institute of Analysts and Programmers

“GOSS is proud to sponsor the project prize at the University as it offers a great incentive to the students while reaffirming the GOSS commitment to innovation and technology.”
Robert McCarthy, Technical Director, Goss Interactive

“The British Computer Society South West branch sponsors the Best Computing Student prize to reward the highest achieving student across the computing degree programmes and to contribute to the commencement of their professional career.”
Kevin Chamberlain, BCS South West Branch Secretary
Can you define what a computer is these days? A mobile phone, an iPod, a central heating controller - are they computers? We think they are! Computers are at the heart of everyday life. This course provides a toolkit suited for a career in computing: a sound underpinning in the theory of computer science and the necessary professional skills to succeed.

Computer science lies at the technical end of our breadth of courses and is very much focussed upon up-and-coming technologies and their potential impact upon the sector. At present technologies such as mobility and robotics, as well as new interfaces to computer technology (for example, the Nintendo Wii) are changing the way business and society is thinking about how computer technology can be used. This course examines the state of the art, how these developments might change the sector, and how computing fundamentals are affected by them.

However, the course also places strong emphasis on professional skills, as these are equally important in gaining employment in the high tech end of the sector.
Year 1
Computing fundamentals, which are also the building blocks of computer science (how computers work, programming, systems analysis and design, security) are covered in detail. In addition, a large amount of the first year is spent in workshop sessions introducing students to various research areas within the computing field and to encourage them to explore emerging areas within the sector. Finally, professional and ethical issues are introduced from both a research and professional perspective to ensure students are thinking about career development from the start of their degree.

Year 2
Develops more in-depth knowledge on top of the foundations laid in year one. Further computing fundamentals are development (including mobile devices, databases and networking) as well as introducing new research areas such as information retrieval (search engines), human computer interaction and artificial intelligence. Further professional issues are explored in a module looking at legislation in the IT sector. At the end of the second year students will work on an “integrating project”, which will draw on all of the disciplines from the first two years to develop a novel computer application.

Optional placement year
(see page 6)

Final Year
A major part of the final year is an individual project, where the student carries out a major piece of research or development work in an area of their choosing. In addition, students specialise to pursue interests or intended career path with a comprehensive set of options across advanced aspects of computer science: advanced information retrieval, software management and metrics, web technologies, programming for entertainment systems, etc.
Duration
3 years full time or 4 years with Placement Year

Entry requirements
240 points including two A levels or one 12-unit Vocational A level. Remaining points can be made up as you wish. One technical subject preferred. All subjects except General Studies and Key Skills considered. A-level entrants will also need GCSE grade C or above in Maths and English. International Baccalaureate: 26 points. Other qualifications (eg Access Courses) may be acceptable, please enquire.

UCAS code: G401

We are aware that a lot of people know they want to do a degree which relates to the Computing discipline, but are not sure what area they would best fit!

BSc (Hons) Computing is our most general degree in the Computing discipline. It deliberately takes a broad view of the sector and equips students with the knowledge to be able to make informed decisions on the area of the sector they wish to enter into.

The first two years of the course cover computing fundamentals from different strands of the sector, such as system administration and management, software development and interactive media, as well as personal and professional development.

Students develop their knowledge from these different areas, how they differ and how they interrelate so they appreciate where their own strengths and interests lie. The first two years comprise a general grounding in computing. You will learn how to configure, interconnect and program computers.

The final year provides much choice, giving the opportunities to study chosen subjects in depth.

“ BSc (Hons) Computing is a great degree course. It has given me a great insight into the world of computers and technology. It covers a broad range of the many aspects of computing and then lets you tailor your final year to the subjects which have really interested you over the first two years. The University of Plymouth is a great place and offers many opportunities for students. It has been an inspiration to me and my studies”

Tammy Bailey, former BSc (Hons) Computing Student
Year 1
A broad range of subjects within the Computing discipline: software development, algorithms and data structures, database, systems analysis and design, computer systems and networks and multimedia production techniques are all covered.

Time is also spent examining the sector and reflecting upon the job market to help inform choices on career direction.

Year 2
Further development of computing fundamentals. A strong focus of the second stage is distributed computer systems, so networking, administration and management play a large part, as well as new subjects such as artificial intelligence and human computer interactions, as well as further professional studies in areas of ethics and legislation and how they affect the Computing discipline.

Optional placement year (see page 6)

Final Year BSc (Hons)
A major part of the final year is an individual project, where the student carries out a major piece of research or development work in an area of their choosing.

In addition a broad range of options across the Computing subject area are available. There a lots of in-depth technical options within the software development field (including developing for entertainment systems), emerging networking issues, further artificial intelligence and in-depth examinations of security issues (see page 29 for further details).
BSc (Hons) Computing and Games Development (UCAS code G455)

Computing and Games Development is a course which allows a final year specialism examining the nature of the games industry and the technical skills needed to enter into it.

The first two years of the course are the same as BSc (Hons) Computing - it lays the foundations with core technical skills that are needed to develop the latest leading-edge games.

In the final year, the course focuses on the skills needed for people wishing to progress into the Computer Games industry. As well as a substantial individual project which studies aspects of the industry in depth, this programme considers aspects of gaming in depth.

Modules in software development for graphical and entertainment systems examine the latest technologies for writing complex, media rich, interactive applications. Images on these pages are taken from student project work in these modules.

As one of the growth areas in gaming is distributed platforms, there are also options to examine aspects of networking in detail, and students can also take artificial intelligence options which they can also embed in their project work to make sure interactive experiences are lifelike.
BSc (Hons) Computing Final Year Specialisms

**BSc (Hons) Computing** - allows students wishing to specialise in the final year of BSc (Hons) Computing and achieve a degree title that reflects that specialism with a number of named exit awards.

**BSc (Hons) Computing for Commerce and Business** - provides options for working towards a career at the business analysis end of the sector with modules such as project management, business intelligence and professional practice.

**BSc (Hons) Computing and Software Development** - a final year specialism that allows a student to develop further technical skills in software development. Advanced programming options such as distributed systems and graphics are available, as well as management aspects of the development process.

**BSc (Hons) Computing and Web Technologies** - examines in more detail various aspects of the web such as service orientation, mobility and security.

All of these awards are final year only pathways - applicants to BSc (Hons) Computing can transfer to these courses after completing their first two years.

Further details of final year specialisms can be found on the School of Computing, Communications and Electronics' website: [www.plymouth.ac.uk/computing](http://www.plymouth.ac.uk/computing)

Employer Focussed Pathways

We are also in the process of developing a number of pathways in BSc (Hons) Computing that align with skill sets in demand with employers. The first of these, in association with Government Communications Headquarters (GCHQ), aims to equip students with necessary skills and knowledge to work in the technology roles within a security organisation.

The final year route into this pathway considers aspects of project management, networking specialisms and information security that gives a breadth of in-demand skills that GCHQ is looking for in graduates they recruit. Our long term relationship with GCHQ allows us to continually reflect on their demands and modify this route as appropriate when their needs change.

This is the first of our employer focussed pathways and we will add more with other regional employers in the fullness of time.
BSc (Hons)
Computer and Information Systems Security

Duration
3 years full time or 4 years with Placement Year

Entry requirements
240 points including two A levels or one 12-unit Vocational A level. Remaining points can be made up as you wish. One technical subject preferred. All subjects except General Studies and Key Skills considered. A-level entrants will also need GCSE grade C or above in Maths and English. Other qualifications (eg Access Courses) may be acceptable, please enquire.

UCAS code: G406

Computer security is constantly in the press, and generally for the wrong reasons. Companies lack appropriate security knowledge to protect their own, and their customers’ data effectively and they are often extremely exposed as a result of this lack of knowledge.

Therefore it is unsurprising that security skills are in high demand across the sector. Hackers, viruses and spyware are just three of the many reasons why security is vital in the design, development and implementation of today’s information systems. Graduates with a degree in Computer and Information Security are in high demand in the sector.

It is important to stress that this course examines security issues across an organisation. Security is not simply a technical issue that can be resolved with appropriate anti-virus and firewall technologies. It requires management, as well as technical, understanding to be implemented effectively.

The course can be broken down into three core themes:

• Core computing principles; if one is to protect computer and network resources from attack understanding the nature of such is essential.

• Technical skills and knowledge in the attack and defence of IT systems, including access to secure lab resources in order to develop technical knowledge on topics such as hacking and forensics in a safe environment.

• The management knowledge required to be able to achieve secure information systems from organisational perspectives to legal and regulatory control.

In addition, the courses have a professional/career development theme running throughout.
Year 1
The first year provides an introduction into the world of information security: hackers, crackers, viruses, trojans, worms, botnets, zombies, phishing and pharming. Alongside these course specific subjects, core computer principles such as programming, computer systems, networks and systems analysis and design are also covered.

In addition, personal and professional skills for a successful career in information security also begin at year 1 of the course.

Year 2
The second year develops more in-depth skills within the security field, such as the development of secure network infrastructures: firewalls, wireless security and intrusion detection systems. Systems security analysis and design, and the techniques therein (access control, authentication, biometrics, trusted computing) are introduced, and further work is carried out on computing fundamentals, with a particular focus on network and server administration. Legal and ethical issues are also considered against the security subject area.

Optional placement year
(see page 6)

Final Year
A major part of the final year is an individual project, where the student carries out a major piece of research or development work in an area of their choosing.

Further security related aspects are developed alongside project work, including in-depth analysis of computer forensics, intrusion detection and cryptography. Further legal and regulatory aspects are examined along with further aspects about the management of security information systems.
BSc (Hons) Computer Systems and Networks

Duration
4 years including Placement Year

Entry requirements
240 points including two A levels or one 12-unit Vocational A level. Remaining points can be made up as you wish. One technical subject preferred. All subjects except General Studies and Key Skills considered. A-level entrants will also need GCSE grade C or above in Maths and English. Other qualifications (eg Access Courses) may be acceptable, please enquire.

Computer networks underpin virtually all business across the country today. They provide the infrastructure for the Internet as well as corporate networks, and are key resources within any organisation - without the network, the business cannot function.

Networks are also becoming more and more important to our social lives - homes with broadband have increasing reliance on network provision to deliver television and telephone functionality within the home, and mobile networks mean we can connect regardless of our location.

Networks are precious resources and the people who develop, manage and maintain them are very much in demand.

The Computer Systems and Networks degree provides the required knowledge for graduates to act as networking professionals within organisations that either use networks as part of their mainstream IT operations, or that supply networking products or services to other organisations.

BSc (Hons) Computer Systems and Networks is sponsored by the worldwide leaders in networking, Cisco Systems, and their CCNA curriculum is embedded in years one and two. This means that as well as a degree, students can achieve the industry standard qualification for the networking sector with no additional work.

Cisco Systems’ support of the course also extends to supporting the degree with state-of-the-art equipment which is used in practical sessions within a protected environment, meaning students can develop and troubleshoot networks without risk to the outside world!
Year 1
The first year of the course focuses on a core of networks and distributed information systems. To support this theme, the basic principles of underlying computing, electronics and communications technologies are explored in detail.

The course also provides foundations in relevant supporting areas, such as mathematics, statistics and business, as well as computing fundamentals.

A key feature of the first year is practical work alongside the theoretical aspects of networking.

Year 2
This year further develops issues of networking and supporting technologies including security and databases, complemented by studies in business, law and human factors within computing.

Towards the end of the second year an integrating project brings together all of the strands of the course to date giving students an opportunity to undertake a development project which draws from all of their skills.

BSc (Hons) Computer Systems and Networks has a mandatory placement year. However, those students who do not wish to do a placement can transfer to BSc (Hons) Computing and Networks, which covers the same material as Computer Systems and Networks without the placement expectation. For further details on this course, please visit our website: www.plymouth.ac.uk/computing

Final Year
The final stage gives students the opportunity to develop specialist techniques in areas such as networking technologies, network administration and distributed applications, as well as undertaking a substantial individual project in the networking area.
BSc (Hons) Computing Informatics

Duration
4 years including Placement Year

Entry requirements
240 points including two A levels or one 12-unit Vocational A level. Remaining points can be made up as you wish. One technical subject preferred. All subjects except General Studies and Key Skills considered. A-level entrants will also need GCSE grade C or above in Maths and English. Other qualifications (eg Access Courses) may be acceptable, please enquire.

Computing Informatics is our longest running honours degree course in the Computing discipline, and was established in 1986 to meet the growing demands of the Computing industry to provide graduates with business, as well as technical, skills.

The demand has not lessened in the last twenty years. In fact, the demand for business aware IT professionals has never been higher, which explains why the degree course has one of the highest employability rates from any course in the University. Regional employers are familiar with the course and its content and place a high premium on Computing Informatics graduates.

The course addresses the gap between what businesses want and how to express it in terms the IT department will understand! Its graduates will occupy all manner of roles in companies, but most develop careers around business analysis and IT management.

Within the Computing Informatics course, the concept of information is key - how to understand the requirements for information, how it is stored, and how it can be retrieved and transformed in an appropriate manner to fulfil the need. That means that this is a degree with aspects of business and management but also a strong technical element. In order to be an effective IT Manager, one needs to clearly understand the technologies to be managed.

“A shortage of skills and talent in IT and business is threatening business growth... traditional, technical, IT skills were unable to satisfy the burgeoning demand to develop IT and business together.”

Year 1
The focus of the first year is to present a broad context of the sector and the various disciplines there in. You will be introduced to how computers work and their application in business, and also study business and systems analysis, software engineering, computer systems and database development.

This will build the foundation to develop your skills, confidence and understanding of IT and the context in which software systems are developed.

Year 2
Year 2 expands and strengthens your understanding of techniques associated with the analysis, design and development of complex software systems. New topics introduced at this level include information retrieval, project management, large-scale database systems and web development. At the end of the second year there is an integrating project which presents the opportunity to develop a complete software system drawing together all of the skills learnt in the first two years of the degree.

BSc (Hons) Computing Informatics has a mandatory placement year.

Final Year
The final year presents opportunities to specialise in areas such as multimedia and computer graphics, networking and artificial intelligence as well as further management specialisms such as web technologies. You will also undertake a substantial individual project allowing you to pursue your interests in depth.

A major part of the final year is an individual project, where the student carries out a major piece of research or development work in an area of their choosing.
BSc (Hons) Web Applications Development

Duration
3 years full time or 4 years with Placement Year

Entry requirements
240 points including two A levels or one 12-unit Vocational A level. Remaining points can be made up as you wish. One technical subject preferred. All subjects except General Studies and Key Skills considered. A-level entrants will also need GCSE grade C or above in Maths and English. Other qualifications (eg Access Courses) may be acceptable, please enquire.

UCAS code: G454

BSc (Hons) Web Applications Development is similar in approach to Computing Informatics, but focuses in the web arena.

Web development is one of the most unregulated, yet visible, aspects of the IT industry. Recent statistics suggest that 90% of companies are unhappy with their web presence but unsure what to do about it.

BSc (Hons) Web Applications Development attempts to bridge the issues between people wanting websites (which is essentially every business in the country) and those who develop them, to ensure that what is developed is appropriate, easy to use, and legal!

It should be stressed that Web Applications Development is not solely a web design course. There are aspects of design within the course, but these are developed alongside other aspects of the discipline so students get a broad grounding across the sector to help them understand the mindset of the sorts of people they will be dealing with within web management roles.

The course aims to develop graduates who will work in their own companies developing web technologies for clients, or within large companies managing their web presence. The course acknowledges that web interfaces no longer exist in isolation to the rest of the company, and knowledge is developed to ensure smooth transition between web ‘front end’ and in-house systems. In addition, management and legal issues are covered to make sure that whatever is developed is done so in a professional manner.
Year 1
Year 1 starts with key technical skills for professional website development: technologies, methodologies, interacting with users, creative design skills for interactive multimedia.

Alongside these specific skills are computing fundamentals such as programming, database systems and multimedia technology.

In addition, great emphasis is placed on career development and personal skills for success in the professional environment are also considered.

Year 2
The second year develops further technical skills in areas such as web applications development and content managed systems, as well as technical management in areas such as systems, network and server administration.

Consideration of the management of such resources is considered through topics such as electronic commerce, information retrieval (how search engines work) and project management as well as legal aspects of web based systems such as data protection and accessibility.

Final Year
A major part of the final year is an individual project, where the student carries out a major piece of research or development work in an area of their choosing.

Also core within the programme are modules considering the leading edge of web technologies as well as modules investigating security management and implementation.

A range of optional modules allow further specialisms in areas such as networking and information retrieval.

Optional placement year (see page 6)
The School of Computing, Communications and Electronics, with support from the Higher Education Funding Council for England and local ICT employers, is delighted to introduce three new two-year honours degrees in the Computing subject from September 2008. This innovative new approach to delivering higher education has been developed in response to demand from students wishing to accelerate their career development and employers looking for get-ahead graduates who are committed to getting into the job market.

At the time of writing the University of Plymouth is the only university in the country to offer two year honours degrees in Computing and IT.

The courses are shortened to two years by utilising the traditional four month summer break with summer schools in June and July. During the traditional autumn and spring terms, two year students have the same workload as three year students, so there’s no need to miss out on the total “student experience.”

Work placements are also offered on the two year courses, which means students can achieve a full honours degree, and a year’s work experience, in three years.

We offer three two year courses that cover different aspects of the sector:

- BSc (Hons) Computing For Business Applications
- BSc (Hons) Information Systems
- BSc (Hons) Information Technology Management
Key features of all two year courses:

- earn a full year's salary when other students are still in study – surveys have suggested that the average graduate starting salary now exceeds £20,000
- be earlier into the job market and a year higher up the career ladder
- offer employers more up-to-date skills (at most two years old)
- stand out from the crowd - successful completion of a full honours degree in two years demonstrates to potential employers a “get-ahead” mentality, motivation and commitment to hard work
- courses designed with input from local and national IT employers
- IT consultancy working directly with industry is a core part of the courses, enables students to gain invaluable professional insight and experience, and enhances future employability
- optional (paid) work placement year in the IT industry
- pay two years' fees rather than three
- reduce accommodation & living costs by up to a third
- enjoy other financial benefits including an additional year's pension contributions and a year earlier into the housing market
- transfer arrangements to three year honours degrees are available for students who subsequently decide to choose this route

“We are very supportive of the approach and content of these two year degrees. Students wishing to take such a course are demonstrating a good commitment to career development in a sector experiencing high demand for relevant industrial and professional skills.”
Charlotte Lane, Sector Advisor for ICT, South West Regional Development Agency.

“We believe that students opting to do a two year degree are showing an early and strong commitment to their career. The Met Office, like many other organisations, is always looking for graduates committed to taking their careers forward in world class organisations like our own.”
Lynda Jones, Head of Production Resources, The Met Office.
All of our two year degrees have a core content that is common to all of the courses. These are as follows:

**Year 1 (Sept - April)**
This year covers computing fundamentals for all courses. It examines database development and how to design 'back end' database systems, software engineering and programming skills, an introduction to computer security - the composition of systems and how they are attacked, and professional development - examining the IT sector and careers therein.

**Year 2 (June - Dec)**
The second year starts by developing further skills in programming techniques. IT project management is introduced - techniques to deal with the management of complex IT projects. At this point, an 'integrating' project is set - using an employer specified project to bring together core skills in the implementation of a real world system. Finally, further database development is considered, examining large scale databases using Oracle, as is human computer interaction.

**Year 3 (Jan - Aug)**
The final year consolidates skills common to most IT careers, considering software management in more detail and examining the latest professional issues affecting the sector. In addition, business intelligence techniques are explored and two large projects are undertaken - industrial consultancy working in groups with a company and an individual project.

**Optional Placement Year**
A placement year is also available to all two year courses, meaning students can gain a full honours degree and a year’s work experience in three years. The placement takes place halfway through the final year and lasts for one year.
The Computing for Business Applications degree is the most general of our two year courses, and reflects the nature of our BSc (Hons) Computing degree - developing technical knowledge in a business context. As such, the additional topics covered in this course are predominantly technical in nature:

**Year 1 (Sept - April)**
The course covers an introduction to enterprise, ensuring basic business knowledge which helps in considering the impact of computer systems in such contexts. Aspects of computer systems - the internal operation of computer hardware and networking are examined, and finally web technologies are introduced - the components of web based systems and how to develop applications for such.

**Year 2 (June - Dec)**
The second year develops further technical skills, such as software engineering with Java & UML. Security at the system level is considered, and further web technologies feature strongly, considering server side web development and the implementation of eCommerce systems.

**Year 3 (Jan - Aug)**
The two strong themes of server side web development and security are developed further - considering advanced aspects of the web such as service orientation, mobile systems, etc. Finally, application level security is examined - in particular why web applications are vulnerable and what developers can do to protect them.
BSc (Hons) Information Systems

Duration
2 years full time or 3 years with Placement Year

Entry requirements
260 points including two A levels or one 12-unit Vocational A level. Remaining points can be made up as you wish. All subjects except General Studies and Key Skills considered. A-level entrants will also need GCSE grade C or above in Maths and English. Other qualifications (eg Access Courses) may be acceptable, please enquire. All two year applicants are interviewed to ensure they understand the nature of the delivery of two year programmes.

UCAS code: G500

The Information Systems course considers more of the “human” aspects of computer systems, predominantly around web-based platforms - how and why people interact with IT and how can systems be developed to ensure the human interface is effective. The additional topics covered in this course cover aspects of web design, management and human interaction:

Year 1 (Sept - April)
Considering the nature of information systems - how and why people use them and the value of information to the end user. Web technologies are introduced to understand how such systems are composed and how we develop applications for such platforms, as well as interactive multimedia and digital design, which focuses upon design and “front end” aspects of systems development.

Year 2 (June- Dec)
Further aspects of the Web are developed - eCommerce and the technologies therein, and aspects of server side web development. Further human factors are explored in Internet culture & psychology - which very much focuses upon the social and behavioural aspects of the web. Finally, the management of such systems is introduced as a topic.

Year 3 (Jan - Aug)
Further consideration of the development of web systems is examined, exploring leading edge issues such as service orientation and emerging server side platforms. This is complemented by an examination of “pervasive computing” - the reach of computer technologies and how they affect everyday life, and the extent of the web’s reach through mobile and embedded systems.
BSc (Hons) Information Technology Management

Duration
2 years full time or 3 years with Placement Year

Entry requirements
260 points including two A levels or one 12-unit Vocational A level. Remaining points can be made up as you wish. All subjects except General Studies and Key Skills considered. A-level entrants will also need GCSE grade C or above in Maths and English. Other qualifications (eg Access Courses) may be acceptable, please enquire. All two year applicants are interviewed to ensure they understand the nature of the delivery of two year programmes.

UCAS code: G5N1

Information Technology Management addresses the high demand for skilled graduates who understand the underlying technologies of computer systems and networks, and how they can be effectively managed to deliver business and end user requirements. Similar in nature to BSc (Hons) Computing Informatics, and developed from a curriculum specified by major IT sector employers such as BT, Computer Associates, Syngenta and the BBC, the course comprises a balance of technical, management, business and interpersonal skills:

Year 1 (Sept - April)
The first year of Information Technology Management develops on the technical core subjects of the fast track degrees with a strong business focus, covering business basics, accounting and organisational behaviour - all of which are key requirements for the management of IT systems.

Year 2 (June - Dec)
The second year focuses more on the specifics of management with technical systems, developing further technical skills such as software engineering with Java & UML, as well as security and server administration. In addition, information technology management is considered as a topic, examining how standards such as ITIL enable the effective management of information systems.

Year 3 (Jan - Aug)
The final year aspects of Information Technology Management develop further career skills, firstly considering entrepreneurial skills - how to set up and run your own business. Finally, professional practice and social responsibility examines the constantly changing nature of the sector and provides up-to-the-minute career analysis to ensure graduates have a strong focus on employment upon graduation.
BSc (Hons) Computing with foundation year (UCAS code: G402)

BSc (Hons) Computer Systems and Networks with foundation year (UCAS Code: G422)

Duration
1 year (September - May)

Entry requirements
Normally 5 GCSE’s including English, Science and Maths (a summer school may be available for those without Maths) plus one A-level in almost any subject. Mature applicants with appropriate work experience may also be considered.

We offer two of our courses with an introductory “year 0”. This Foundation Year is designed to equip those applicants who have been away from study for a number of years, or those who have not achieved enough UCAS points to progress straight onto a degree course, with the necessary skills to progress onto year 1 of one of our computing courses. The courses are delivered at the University by the same staff who teach on the later stages of the courses.

Applicants can choose either a year 0 for Computing or Computer Systems and Networks. After successfully completing year 0, applicants can progress onto year 1 of the named courses, or transfer to another one of our computing degree courses, including our two year, fast track, BSc (Hons) degrees.

Both courses cover a number of common areas during the year:

- Mathematics for Computing and Statistics - gives a gentle introduction to the sorts of maths used within the Computing discipline and the use of statistics in a business context for decision making, management planning, etc.
- Electronics and Computer Systems considers the hardware aspects of computer technology and how the various elements therein interact, as well as considering how such devices communicate using networks.

- Computer Programming - an introduction to computer programming, a fundamental skill for any career in the IT sector. This subject considers how to develop basic web pages and windows applications, and introduces the techniques in developing such.

- Project - this subject allows students to work on their own in developing a project related to their course. Projects in the past have included a simple game that uses artificial intelligence techniques, a banking database and a family history website.
Before starting at Plymouth University I was a Royal Navy Submariner - I had chosen this path due to my prior education. I had always wanted to attend university but felt, like many I have spoken to on my course, that my chance had passed me by. I came to an open day and was recommended to try the Technology foundation course.”

The Foundation Year was essential for me to progress onto the Degree course I am now on. The Maths, which was always my weakness, was explained in an easy-to-understand way and the support structure at the University is, I believe, second to none. I feel that I am finally heading down the path I dreamt of all those years ago and my only regret is that I did not take the plunge sooner.”

Mark Niland - BSc (Hons) Web Applications Development stage 1 course representative

Your route to a successful career
Year 0 entries (and foundation pathways) are well established and have allowed many hundreds of people to obtain a good degree and subsequently progress to a successful career.

Students returning to study
If you are returning to study the Foundation year (year 0) is a very good route into higher education and our computing courses. Some of our most successful students are those who have returned to study later in life.

For more information contact our Routes into Higher Education Service. There is also a Returning to Study Guide available on request and a website:

www.plymouth.ac.uk/return
Email: routes@plymouth.ac.uk
Tel: +44 (0)1752 232691
Progression and transfer routes

**Year 0 and 1 Transfer Routes**

We are aware that when students sign up to do a degree in Computing with us, they are not always 100% clear on the path they wish to take in developing their career. Computing and IT is a fast moving discipline and we invest a lot of time in the first year of all of our courses in developing a student’s appreciation of the sector.

For that reason, we have a large number of flexible transfer routes through our courses. With the exception of BSc (Hons) Computer Systems and Networks, there are transfer routes between all of our courses after the first year. This means that if a student were to take BSc (Hons) Computing but, at the end of year 1, wished to transfer to year 2 of BSc (Hons) Computing Informatics, they would be able to do so if they were successful in completing their first year assessments.

Transfer routes also apply between two year, fast track courses, and out of fast track courses to a three year degree. The only course which does not offer this flexibility is BSc (Hons) Computer Systems and Networks, which has a lot of learning related to the CCNA certification in year 1, and it is for this reason that there are no transfer routes from year 1 of this course.

**Year 2 Transfer Routes**

Similar transfer routes exist at year 2, although it should be stressed that any student wishing to graduate with BSc (Hons) Computing Informatics or BSc (Hons) Computer Systems and Networks must complete a full placement. However, a student on one of these courses who does not wish to take advantage of a placement opportunity can transfer onto year 3 of other courses.
Making your application

All applications (for first or second year entry) should be made through UCAS (Universities and Colleges Admissions Service). The UCAS website offers much helpful advice and information, and allows you to apply online.

Contact:
www.ucas.com

There are also some good independent web sites, designed for students, that include useful information about gap years, UCAS points, career planning, what to do with disappointing A-level results, finance, employment rates and what sort of work various professionals undertake.

www.prospects.ac.uk
www.doctorjob.com

Overseas students may find www.educationuk.org useful.

University Open Days and Course Preview Days are available to help you with this decision.

A summary of the standard UK entry requirements are given on each course page. Most equivalent overseas qualifications are also acceptable but, because of the difficulty of comparing different qualifications, there may be no “standard” requirement; each case will be judged on merit when an application is received.
Advice or visit any time

The Computing Admissions Tutors are always pleased to give advice or to show around individuals who cannot attend an organised University Open Day or Course Preview Day. We also host many inward visits and organised activity days for school groups, from Year 8 to Year 13. We are happy to help whenever we can. Our contact details are:

Faculty of Technology Admissions Team
University of Plymouth
Drake Circus, Plymouth
PL4 8AA
UK
Tel: +44 (0)1752 586000
Fax: +44 (0)1752 586003
Email: technology@plymouth.ac.uk
www.plymouth.ac.uk

University Open Days

These are usually held in June and October each year. They are designed for people who have not yet made an application to UCAS and who want information about the university and its courses. In addition to tours of the city centre and accommodation, there is the chance to talk to computing staff, to visit the laboratories, and to discover more about what makes Plymouth a great place to study computing and IT.
If you apply through UCAS for any of the computing courses run by the School of Computing, Communications and Electronics then you will be invited automatically to one of our Course Preview Days. These are usually held from February through to May of your year of entry. They provide an excellent opportunity for you to find out more about the course you are interested in, the way it is taught, and the career opportunities available to graduates. We also include a tour of our lecture rooms and laboratories, plus a visit to the halls of residence and a coach tour of Plymouth Hoe and the city centre.

Equally as important, Course Preview Days give you the chance to talk to some of the lecturers who will teach you and to some of our current students. The day provides a good opportunity to find out what it would be like to live and study in Plymouth. We are a friendly School with some unique courses located on a compact, city centre campus that is having £200 million spent on refurbishment and new buildings. We hope you will visit us to see what we offer.

All details in this booklet are correct at the time of writing. However, courses are regularly being reviewed and updated, so there may be changes from time to time. If you would like confirmation of any detail, please contact us.
### Computing

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<thead>
<tr>
<th>Undergraduate</th>
<th>UCAS code</th>
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<tbody>
<tr>
<td>BSc (Hons) Computer and Information Systems Security</td>
<td>G406</td>
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<tr>
<td>BSc (Hons) Computer Science</td>
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<tr>
<td>BSc (Hons) Computer Systems and Networks</td>
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<td>BSc (Hons) Computing and Games Development</td>
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<td>BSc (Hons) Computing Informatics</td>
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<td>BSc (Hons) Web Applications Development</td>
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<td>BSc (Hons) Computing for Business Applications</td>
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<td>BSc (Hons) Information Systems</td>
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<td>BSc (Hons) Computing with Foundation Year</td>
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<tr>
<td>BSc (Hons) Computer Systems and Networks with Foundation Year</td>
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