University of Plymouth, UK

Why Plymouth?

Fantastic leisure opportunities
Plymouth is situated on the beautiful south Devon coast with miles of stunning beaches, and is famed for its surfing activities along with neighbouring Cornwall. Dartmoor National Park is to the north of the city, giving you 365 square miles to go hiking, biking, climbing or horse-riding. The city itself has a population of 250,000 and is very student-orientated making for a vibrant atmosphere - you will find numerous restaurants, cafes, cinemas, theatres, night-clubs and around 200 pubs and wine bars. Plymouth is a historic city with strong maritime roots, and caters for a wide range of cultural, religious and social traditions.

City Centre campus
The University is five minutes walk from the city centre and 10 minutes walk from the train and bus stations, making everything easily accessible. Plymouth airport is 15 minutes by road, and London is 3 hours away by train. One of the UK's largest universities: with over 23,000 students from over 20 countries.

Good value accommodation
The city of Plymouth has an abundance of good quality, cheap accommodation, as well as the university's own Halls of Residence. Our Accommodation Office undertakes to help all students find suitable accommodation. Contact: +44 (0)1752 232062.

Excellent support services

The International Office
The University of Plymouth regards international students as an important and integral part of its community, and has wide experience of dealing with students from all over the world and can provide friendly, expert advice on:

- travel arrangements
- financial matters
- immigration regulations
- entry visas
- free English language support sessions
- information on social and cultural events in Plymouth

All international students are invited to attend an Orientation Programme. Contact the International Office on: +44 (0)1752 233345 for further information, or visit www.plymouth.ac.uk/international

Careers counselling and information
To help you with business skills and to find work after your studies.

Disability Assist Services
You will find help and support throughout your studies if you have any special learning difficulties. Contact: +44 (0)1752 232289.
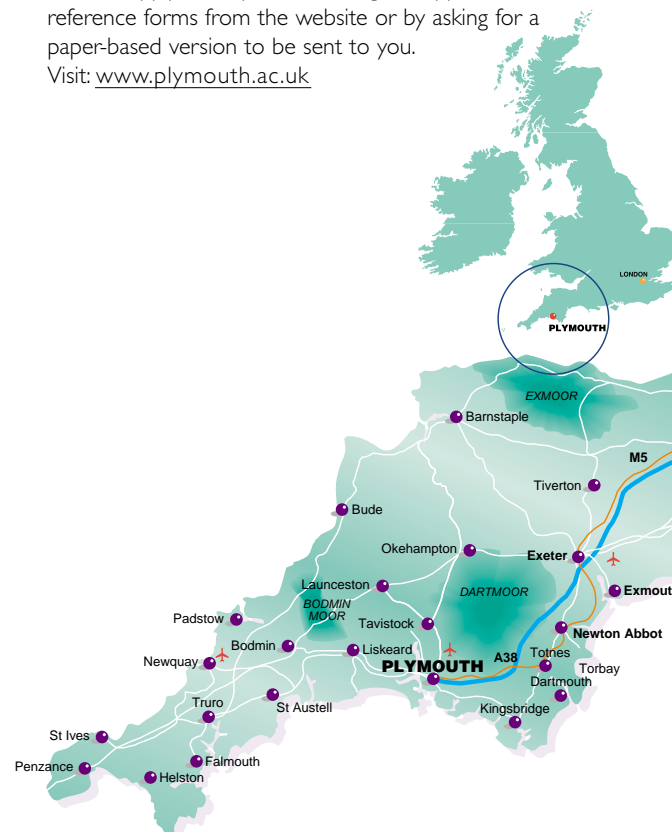
Students Union and Student Services
The Students' Union is run by students for students, and organises a large number of clubs and societies, sports and entertainment and offers support and advice. They provide personal counsellors, financial advice, insurance services, a travel service, legal advice, subsidised bars, entertainment, sports clubs, child care facilities, a medical centre, shops and launderettes.

The International Students Society aims to bring together students from different countries and cultures through social events, and assists international students into their new studying and living environment. Contact: +44 (0)1752 663337.

Applying
You can apply free by downloading the application and reference forms from the website or by asking for a paper-based version to be sent to you. Visit: www.plymouth.ac.uk

If you require any part of this publication in larger print, or an alternative format, please contact:

Sarah Warn, Disability Assist Services
t: +44 (0)1752 232289
f: +44 (0)1752 232279
e: s.warn@plymouth.ac.uk

1 year full-time

Course starts September or January

Course Summary
This modular MSc course (formerly called Integrated Services & Intelligent Networks Engineering) has been completely revised to keep at the forefront of new developments, after having run very successfully for six years. It runs in parallel with the MSc Communications Engineering & Signal Processing, and other new MSc courses planned for 2004.

This course is supported by the Network Research Group and endorsed by Orange

orange

The course aims to provide
- knowledge of the technologies for effective provision and management of network services.
- a high level awareness of the issues arising from the convergence of computing and telecommunications technologies.
- a broad grounding in network architectures, protocols and related standards, and a detailed understanding of the underlying technologies.
- an understanding of the communication engineering and computing issues related to intelligent communication networks, network design and network management.
- an ability to follow a career in the networking and/or telecommunications industry, or in academic research.

The course is broken up into three blocks of study: Block 1 (Autumn), Block 2 (Spring), & Project (all year + summer full-time). You can start the course at the beginning of Block 1 or 2.

One of two Masters awards may be achieved. The MSc which has two terms (blocks) of taught study and a research project, and the MRes, which has one term (block) of taught study and a long research project. NB the MRes is most suitable for company employees who can gain a terms leave and then return to undertake the project in the workplace. MRes suitability for other students is assessed during the first term of study.

Block 1
Security - 20 credits

Mobile, Personal & Satellite Communications 20 credits

Network Operating Systems & Middleware 10 credits

Personal & Professional Skills - 10 credits

Block 2
Multimedia Communication Networks & Design - 20 credits

Advanced Networks - 10 credits

Optical Communications - 10 credits

Network Management & Design - 10 credits

Research Skills & Project Development 10 credits

MSc students take both Blocks and the 60 credit MSc Project. MRes students take one Block, both skills modules and the 110 credit MRes Project.

Entry Requirements
A minimum of a second class honours degree (MSc: 2.2 & MRes: 2.1) in a computing, electronic engineering, or similar background. Students with an advanced standing, who can evidence an academic ability to a similar level, will also be considered. All applicants should possess a minimum of grade C in English Language at GCSE level or a minimum score of 6.5 in IELTS or 570 in TOEFL. You must also be IT literate & preferably have some programming experience.
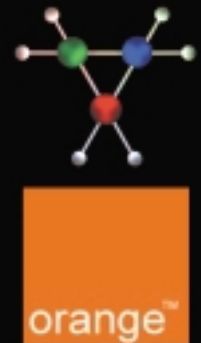
Contact:

Postgraduate Admissions,

University of Plymouth,

Drake Circus

Plymouth, PL4 8AA

United Kingdom

Telephone:
+44 (0)1752 232558

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+44 (0)1752 233305

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Map labels
LONDON
PLYMOUTH
EXMOOR
Barnstaple
M5
Tiverton
Bude
Okehampton
Exeter
Launceston
DARTMOOR
Exmouth
BODMIN MOOR
Padstow
Tavistock
Newton Abbot
Bodmin
Liskeard
A38
Totnes
Newquay
PLYMOUTH
Dartmouth
Torbay
Truro
St Austell
Kingsbridge
St Ives
Falmouth
Penzance
Helston

The School

The School of Computing, Communications & Electronics has gained national and international recognition for its research in network and security engineering, satellite communication and digital signal processing. In the recent National Research Assessment Exercise (2001), we were rated 5 out of 5 for Computer Science denoting 'international excellence', and 4 out of 5 for Electrical and Electronic Engineering denoting 'of national standing'.

The MSc is particularly underpinned by strong research, teaching and project links from within the Network Research Group and with mobile network operator Orange. Please see: http://www.plymouth.ac.uk/nrg

Resources available include a new Networks laboratory funded in part by CISCO, a separate postgraduate study room with full Internet and specialist software, a networks research laboratory and a dedicated communications laboratory.

Other features are visits to related organisations' events and a visiting speaker programme. Please see our web pages for latest and further information.

Module Information

ADVANCED NETWORKS & SECURITY
(10 + 20 Credits)

These two modules look at the theory of network operation and performance in terms of reliability and traffic theory. They also examine issues surrounding the security of networked systems, considering the various threats and vulnerabilities to which they may be exposed and the various practical measures that may be used to reduce the associated risk.

The modules investigate all the latest Convergent network technology with a view to designing Convergent Networks to meet current and future Quality of Service requirements in terms of both information and security needs, with particular emphasis on Voice over IP & Video over IP.

MOBILE, PERSONAL & SATELLITE COMMUNICATIONS
(20 Credits)

This module examines Telecommunication Systems in a global context by linking business, stock market, social, political and regulatory issues with telecommunication technology and its performance boundaries. Students and industrialists have found this to be a most useful primer for engineers and managers who will be working at a strategic level. A variety of presentational skills are also developed including executive summarising/briefing and debating. Case study inference is developed as a predictive tool for trend and issue responses.

Due to the high dynamics of the Telecommunications industry and global economy, this module is designed to be adaptive to rapid changes in market and technical forces.

Cisco router

MRes PROJECT
(110 Credits)

MRes students will undertake an extensive research project (Christmas to September) of their choosing (from a Project Catalogue that includes projects requested by industry). The project may be undertaken in the student's work place. On completion, students communicate their motivation, methodology, and conclusions through a formal dissertation, viva and presentation of a dissertation summarising research paper.

MSc PROJECT (60 Credits)

MSc students will undertake a research project (lasting about 5 months) of their choosing (from a Project Catalogue that includes projects requested by industry). On completion, students communicate their motivation, methodology, and conclusions through a formal dissertation and presentation of a research paper.

MULTIMEDIA COMMUNICATION NETWORKS & DESIGN
(20 Credits)

Multimedia communication is going to be one of the major growth areas in the 21st century, as the general population will no longer be satisfied with just voice communication albeit on a fixed line or mobile device.

As students entering this course come from diverse back-grounds (e.g., computing, communication engineering and electronics), it is essential that a basic grounding in both telecommunication and computing networking technology is provided.

Students will study the architecture and operation of current telecommunication and computer networks and be introduced to the concept of Quality of Service (QoS). In the second part, more advanced techniques are introduced in terms of network design and compression techniques for speech (LPC), video (MPEG) and data (V.42bis).

NETWORK MANAGEMENT & DESIGN
(10 Credits)

Network management is a key issue in the successful operation of both telecommunications and computer networks, both of which are crucial to the financial, commercial and industrial organisations world wide. Current telecommunications and computer network management techniques are studied in the context of modern business applications, and the impact of network convergence on NMS will also be introduced.

Students will be able to compare and contrast different network management systems (NMS) and make informed decisions as to which is the most appropriate to meet their needs. Project cost – comparison techniques (DCF, TCO and ROI) are also introduced, to enable different solutions to a networking project to be compared.

NETWORK OPERATING SYSTEMS & MIDDLEWARE
(10 Credits)

One of the key factors in the successful operation of any computer based network is the choice of network operating system (NOS) and associated middleware (M/W). In this module students will compare a range of current NOSs (Netware, NT, Unix and Linux) in terms of their suitability to meet a range of different requirements. Case studies will be used to demonstrate the strengths and weakness of current NOS and M/W offerings. Given the current interest in network convergence, NOSs and M/W will be evaluated as to their suitability to meet future demands in this area.

OPTICAL COMMUNICATION SYSTEMS
(10 Credits)

Optical fibre communication systems are widely used to provide the highest bandwidth, long haul digital data links. Using wavelength division multi-plexing, data rates of the order of $10^{12} - 10^{13}$ bits/sec may be achieved on a single fibre over distances of many hundreds of kilometres. This module looks at the principles behind optical fibres and the application of optical communication systems to a number of broadband data networks.

PERSONAL & PROFESSIONAL SKILLS
(10 Credits)

This module introduces the skills required for study on an MSc programme. These include the concepts of literature searching, identifying relevant research literature, and its critical appraisal.

The concepts of creative thinking, time management, self-study, self-awareness, presentation and personal skills are developed in the module as a precursor for the project and a professional career.

RESEARCH SKILLS & PROJECT DEVELOPMENT
(10 Credits)

This module guides the student into the research environment and their individual project. It includes a review of project management, research writing, development of a full Project Proposal (on the student's project) and engagement with a series of research talks/specialist updates.

Researching authentication for mobile devices