UNIVERSITY OF EAST LONDON

UNDERGRADUATE PROGRAMME SPECIFICATION
BSc (Hons) Computer Networks

Final award	BSc (Hons) Computer Networks
Intermediate awards available	Cert. H. E, Dip. H. E., BSc
Mode of delivery	On Campus - AMC
Details of professional body accreditation	
Relevant QAA Benchmark statements	Computing
UEL Academic School	School of Architecture, Computing and Engineering
Date specification last up-dated	September 2016

Alternative locations for studying this programme

Location	Which elements?	Taught by UEL staff	Taught by local staff	Method of Delivery
AMC, Greece	Entire programme	No	Yes	Full-time & Part-time

The summary - UCAS programme profile-

BANNER BOX:

Computer networks and the Internet have changed the way we live, work, play, and learn. This programme successfully prepares graduates for computer networking and IT related jobs in the public and private sectors, as well as for higher level studies in engineering, computer science, and other related fields. This programme uses a range of teaching styles; lectures, tutorials, workshops, practicals and delivery via a virtual learning environment. Each module integrates high quality face-to-face teaching with hands-on practical laboratory exercises.

ENTRY REQUIREMENTS

- Relevant Access programme

- Greek Lykeion completion, with an "Apolytirion" grade of at least 10/20
- Mature students, without appropriate academic qualifications but with relevant work experience, attend for interview and an aptitude test.

- Students may be admitted through Accreditation of Experiential Learning (AEL) or Accreditation of Certificated Learning (ACL) processes.

- Successful completion of the IVT Computer Networks Technician programme offered at AMC for entry to level 5 of the BSc (Hons) Computer Networks programme.

At UEL we are committed to working together to build a learning community founded on equality of opportunity – a learning community which celebrates the rich diversity of our student and staff populations. Discriminatory behaviour has no place in our community and will not be tolerated. Within a spirit of respecting difference, our equality and diversity policies promise fair treatment and equality of opportunity for all. In pursuing this aim, we want people applying for a place at UEL to feel valued and know that the process and experience will be transparent and fair and no one will be refused access on the grounds of any protected characteristic stated in the Equality Act 2010.

For International Students:

- From A Level:

including passes at A2 in at least 2 subjects, must include Maths minimum grade C
- From Btec:

Extended Diploma (QCF) or Diploma (QCF) in a related subject grade MMM. Must include Merit in both Mathematics and Further Mathematics.
- From International Baccalaureate:

Diploma with 27 points including a minimum of 15 points at Higher Level and must include Maths and Physics at Higher Level

We would normally expect you to have Grade C in GCSE Mathematics, English and either Physics or Double Science.

English language requirements for all students:

Overall IELTS 6.0 with a minimum of 6.0 in Writing and Speaking; minimum 5.5 in Reading and Listening (or recognised equivalent).

ABOUT THE PROGRAMME

What are Computer Networks?

We live in an interconnected world. Billions of electronic devices connect to one another every day. None of this would be possible without the networks that simultaneously inhabit our homes and workplaces and span the globe. Essentially, this programme illustrates how computers and mobile devices connect to each other, how they exchange data and information from one place to another and how organisations use computer networks to successfully implement their strategic goals.

Computer Networks at UEL

Studying Computer Networks at UEL will include not only the hardware and software that make up a network, but will also involve databases, programming, computer systems, operating systems and network security – as all of these elements are important for an effective, robust and

usable network. Emphasis is placed on the acquisition of practical-based skills and strong theoretical which provides a solid foundation for a career in the IT industry.

Programme structure

The Computer Networks programme is three years full time or four years in the case of the sandwich degree which includes an optional one-year work placement. Full time and sandwich students will study 120 credits per year. Part time students study a maximum of 90 credits per year and typically take five years to complete the programme. Most of the modules are compulsory, but many are shared with our other Computing programmes making the transfer between programmes possible, particularly during level 4.

Learning environment

In addition to the usual teaching and learning facilities such as laboratories, lecture and seminar rooms and a well-resourced library, students have access to a wide range of computing resources. Specialised labs are used for the study of networking and operating system environments such as Windows and Linux. Students are provided with software tools for programming, database development, computer-aided network design and, of course, Internet access. The virtual learning environment Moodle is used to give extra support to students and allow easy communication between students and staff.

Assessment

A variety of assessment methods are used. Some modules are entirely assessed by coursework, although most modules include a combination of coursework and examination. Coursework assessment can take a number of different forms, including presentations, software demonstrations, research-based assignments and practical exercises involving system or program specification, coding and testing. Examinations might include multiple choice tests or more traditional style questions. In all cases, you will be given opportunities to prepare for your assessments and post-assessment you will receive detailed feedback, identifying your strengths and areas in which the standard of your work could be improved.

Students with disabilities and/or particular learning needs should discuss assessments with the programme leader to ensure they are able to fully engage with all the assessment within the programme.

Work experience/placement opportunities

Students have the option to undertake a year long industrial placement following completion of level 5 studies. This placement is normally paid. The university has long standing links with a large number of well-known employers who can provide UEL students with worthwhile work experience. Many students have been offered permanent employment by their placement organisation when they graduate. In addition to enhancing employment prospects, the placement provides a valuable learning experience, but note that securing a placement is a competitive process and cannot be guaranteed.

Project work

Students complete an academic year-long project at level 6. This is a major piece of work that allows students to choose the direction of their study, to develop their own ideas and to integrate the various subjects studied. Students are encouraged to provide their own ideas for the project, but there is always a battery of topics provided by staff from which students can choose.

Added value

In addition to the IT-related skills and knowledge acquired during the programme, you will develop a wide range of personal and professional skills including communication, presentation, negotiation, team working and time management skills. These sought-after skills will be useful throughout your working life and will increase your chances of finding a well-paid and interesting job after graduation.

IS THIS THE PROGRAMME FOR ME?

If you are interested in ....

- How computers are networked
- The architecture of the Internet
- Wireless communication principles and techniques
- Using a host of applications remotely
- Using network development and security tools
- Developing and using technical skills

If you enjoy....

- Solving technical problems
- The challenge of finding a solution to seemingly insoluble problems
- Listening to and working with others to identify and develop these solutions
- Making use of the latest technology

If you want....

- The opportunity to work in a well-rewarded and fast-developing area
- Sought-after and up-to-date skills
- To communicate and work with a wide variety of people to solve a range of business and technical problems
- To combine your interest in computing with other subjects

Your future career

There is a significant shortage of graduates with up-to-date networking skills in the UK. Organisations need access to these skills to make best use of computing and Internet resources.

Potential career paths for Computer Networks graduates include

Network design and administration
1. Network administration
2. Network engineering
3. System administration
4. Network analysis

Technical support
1. Network technician support
2. Hardware installation
3. Software applications support
4. Cabling installation
5. Telecommunications support

For graduates who wish to continue their studies, the Computer Networks degree programme provides a suitable basis for application to a variety of postgraduate programmes, both at UEL and elsewhere.

How we support you

- Personal tutor support throughout the programme.
- Support for development and study skills, preparation for employment and research.
- A Placements Office with well-established links with employers to provide support for finding placements.
- Specialist support for dyslexia and English as a second language
- Student advice services for accommodation, finance, career development, IT training and learning resources.

Programme aims and learning outcomes

What is this programme designed to achieve?
This programme is designed to give you the opportunity to:

- Gain knowledge of modern techniques, protocols, software tools and applications across the area of computer networks.
- Contribute to development of a security policy for an organisation.
- Develop your awareness of the management, economic, legal, social, professional and ethical issues relating to computer networks.
- Learn and work both independently and within groups.
- Develop the necessary study skills and knowledge to pursue further study.

What will you learn?

Knowledge
- How to design and implement networked computer systems.
- How computer hardware and software work together to provide a platform for computer systems.
- How computer systems can be linked together using networks and data communication techniques.
- How to develop secure networks and their importance.

Thinking skills
- Problem solving.
- Evaluation and critical analysis.
- Self-appraisal and review of personal practice.

Subject-Based Practical skills
- Use of a range of specialised computer technology, such as programming languages, databases, operating and network systems.
- Preparation of essays, reports and presentations.
- Production of a major self-directed project.

Skills for life and work (general skills)
- Communication Skills.
- Time management.
- Learning and working both independently and in groups.

The programme structure

Introduction

All programmes are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lectures, seminars and private study).

Credits are assigned to one of 5 levels:

3   equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree programme
4   equivalent in standard to the first year of a full-time undergraduate degree programme
5   equivalent in standard to the second year of a full-time undergraduate degree programme
6   equivalent in standard to the third year of a full-time undergraduate degree programme
7   equivalent in standard to a Masters degree

Credit rating

The overall credit-rating of this programme is 360 credits.

Typical duration

The expected duration of this programme is three (3) years full-time, four (4) years sandwich or five (5) years part-time.

It is possible to move from full-time to part-time study and vice-versa to accommodate any external factors such as financial constraints or domestic commitments. Many of our students make use of this flexibility and this may impact on the overall duration of their study period. A student cannot normally continue to study on a programme after 4 years of study in full time mode unless exceptional circumstances apply and extenuation has been granted. The limit for completion of a programme in part time mode is 8 years from first enrolment.

How the teaching year is divided

The teaching year begins in September and ends in June.

A typical student, in full-time attendance mode of study, will register for 120 credits in an academic year. A student in a part-time mode of study may register for up to 90 credits in any academic year.

What you will study when

A student registered in full-time attendance mode will take 120 credits per year. Typically this will be comprised of four 30 credit modules. The exact number may differ if the programme is comprised of 15, 45 or 60 credits modules. An honours degree student will complete modules totalling 120 credits at level four, modules totalling 120 credits at level five and modules totalling 120 credits at level six.

Level	Module Code	Module Title	Distance learning Y/N	Credits	Status*
4	CN4101	Information Systems Modelling and Design	N	30	Core
4	CN4102	Introduction to Software Development	N	30	Core
4	CN4106	Introduction to Web Technologies	N	15	Core
4	CN4104	Introduction to Computer Systems and Networks	N	30	Core
4	CN4107	Maths for Computing	N	15	Core
5	CN5101	Database Systems	N	30	Core
5	CN5104	Computing in Practice	N	15	Core
5	CN5109	Web Application Development	N	30	Core
5	CN5108	Systems Administration	N	30	Core
5	CN5122	Data Communications and Networks	N	15	Core
P	CN5114	Placement	N	120	Option
6	CN6103	Project	N	45	Core
6	CN6106	Network Design and Management	N	30	Core
6	CN6107	Computer and Network Security	N	15	Core
6	CN6112	Project Management	N	15	Core
6	CN6113	Information Security and Risk Management	N	15	Core

Please Note – A core module for a programme is a module which a student must have passed (i.e. been awarded credit) in order to achieve the relevant named award. An optional module for a programme is a module selected from a range of modules available on the programme. The optional level P Placement module (CN5114) is required to obtain a sandwich degree, in addition to the other requirements, but does not count towards the degree classification

Requirements for gaining an award

In order to gain an <u>honours</u> degree you will need to obtain 360 credits including:
- A minimum of 120 credits at level four or higher
- A minimum of 120 credits at level five or higher
- A minimum of 120 credits at level six or higher

In order to gain an <u>ordinary degree</u> you will need to obtain a minimum of 300 credits including:
- A minimum of 120 credits at level four or higher
- A minimum of 120 credits at level five or higher
- A minimum of 60 credits at level six or higher

In order to gain a <u>Diploma of Higher Education</u> you will need to obtain at least 240 credits including a minimum of 120 credits at level four or higher and 120 credits at level five or higher.

In order to gain a <u>Certificate of Higher Education</u> you will need to obtain 120 credits at level four or higher.

Degree Classification

Where a student is eligible for an Honours degree by passing a valid combination of modules to comprise an award and has gained the minimum of 240 UEL credits at level 5 or level 6 on the current enrolment for the programme, including a minimum of 120 UEL credits at level 6, the award classification is determined by calculating;

The arithmetic mean of the best 90 credits at level 6	x	0.8	+	The arithmetic mean of the next best 90 credits at levels 5 and/or 6	x	0.2

and applying the mark obtained as a percentage, with all decimals points rounded up to the nearest whole number, to the following classification

70% - 100%	First Class Honours
60% - 69%	Second Class Honours, First Division
50% - 59%	Second Class Honours, Second Division
40% - 49%	Third Class Honours
0% - 39%	Not passed

Teaching, learning and assessment

Teaching and learning

Knowledge is developed through
•   Participation in lectures, tutorials and workshops
•   Directed and general reading
•   Primary and secondary research, e.g. using the Internet or Learning Resources Centre

Thinking skills are developed through
•   Successful completion of set assessment tasks
•   Self-appraisal and self-evaluation
•   Critical evaluation of concepts, assumptions, arguments and data

Practical skills are developed through
•   Use of general IT applications such as databases and spreadsheets
•   Use of specialised IT applications such as program development and network simulation tools
•   Investigation of computer hardware, operating systems and networks

Skills for life and work (general skills) are developed through
•   Planning activities with feedback
•   Project work
•   Working in groups to complete work set, such as presentations
•   Working during the sandwich year as a placement student
•   Managing time to complete assessments by deadlines

Assessment

Knowledge is assessed by
• examinations, both unseen and based on previously supplied case studies
• extended essays and reports
• multiple choice tests

Thinking skills are assessed by
• all assessment tasks set, particularly those requiring critical evaluation
• self-appraisal of performance
• use of appropriate problem solving skills

Practical skills are assessed by
• assessment tasks requiring use of general and specialised IT applications
• use of equipment in practicals and presentations

Skills for life and work (general skills) are assessed by
• evidence of group and team working
• completion of the placement year
• the ability to work to time constraints

How we assure the quality of this programme

Before this programme started

Before this programme started, the following was checked:
- there would be enough qualified staff to teach the programme;
- adequate resources would be in place;
- the overall aims and objectives were appropriate;
- the content of the programme met national benchmark requirements;
- the programme met any professional/statutory body requirements;
- the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms.

This is done through a process of programme approval which involves consulting academic experts including some subject specialists from other institutions.

How we monitor the quality of this programme

The quality of this programme is monitored each year through evaluating:
- external examiner reports (considering quality and standards);
- statistical information (considering issues such as the pass rate);
- student feedback.

Drawing on this and other information, programme teams undertake the annual Review and Enhancement Process which is co-ordinated at School level and includes student participation. The process is monitored by the Quality and Standards Committee.

Once every six years an in-depth review of the whole field is undertaken by a panel that includes at least two external subject specialists. The panel considers documents, looks at student work, speaks to current and former students and speaks to staff before drawing its conclusions. The result is a report highlighting good practice and identifying areas where action is needed.

The role of the programme committee

This programme has a programme committee comprising all relevant teaching staff, student representatives and others who make a contribution towards the effective operation of the programme (e.g. library/technician staff). The committee has responsibilities for the quality of the programme. It provides input into the operation of the Review and Enhancement Process and proposes changes to improve quality. The programme committee plays a critical role in the quality assurance procedures.

The role of external examiners

The standard of this programme is monitored by at least one external examiner. External examiners have two primary responsibilities:

- To ensure the standard of the programme;
- To ensure that justice is done to individual students.

External examiners fulfil these responsibilities in a variety of ways including:

- Approving exam papers/assignments;
- Attending assessment boards;
- Reviewing samples of student work and moderating marks;
- Ensuring that regulations are followed;
- Providing feedback through an annual report that enables us to make improvements for the future.

The external examiner reports for this programme are located within the UEL virtual learning environment (Moodle) on the school notice board under the section entitled 'External Examiner Reports & Responses'. You can also view a list of the external examiners for the UEL School by clicking on the link below.

http://www.uel.ac.uk/qa/externalexaminersystem/currentexaminers/

Listening to the views of students

The following methods for gaining student feedback are used on this programme:

- Module evaluations involving the collection of data via questionnaires
- Informal discussions / meetings between students, teaching staff and the programme leader
- Student representation on programme committees (meeting twice yearly)

Students are notified of the action taken through:

- Circulating the minutes of the programme committee
- Providing details on the programme notice board

Listening to the views of others

The following methods are used for gaining the views of other interested parties:

- Discussions with the Placements Officer and visiting tutors
- Liaison with placement employers
- Information provided by the British Computer Society
- Liaison with schools and colleges whose students apply for places on our programmes

Further information

Where you can find further information

Further information about this programme is available from:

- The UEL web site (http://www.uel.ac.uk)
- The programme handbook
- Module study guides
- UEL Manual of General Regulations http://www.uel.ac.uk/qa/
- UEL Quality Manual http://www.uel.ac.uk/qa/
- Regulations for the Academic Framework http://www.uel.ac.uk/academicframework/
- UEL Guide to Undergraduate Modular Programmes
- School of Architecture, Computing and Engineering at UEL http://www.uel.ac.uk/ace/
- External examiner reports (available from UEL virtual learning environment (Moodle)