Computing & Electronics

This programme is no longer recruiting.

Final award	BEng (Hons)
Intermediate awards available	CertHE, DipHE
UCAS code	-
Details of professional body accreditation	None
Relevant QAA Benchmark statements	Engineering
Date specification last up-dated	June 2012

Profile

The summary - UCAS programme profile

BANNER BOX:

This programme covers the essentials of computer based electronic systems engineering.

ENTRY REQUIREMENTS

GCE Advanced level or equivalent including Mathematics **AND** a science subject. A minimum UCAS tariff of 240 is required at A level or a BTEC/EDEXEL National qualification in a cognate subject with 7 merits at level III including Mathematics or an appropriate analytical subject. Entry can also be gained from a recognised foundation year.

In the case of applicants whose first language is not English, then an overall IELTS score of 6.0 (or equivalent) is required together with a minimum of 6.0 for Writing and Speaking and 5.5 for Reading and Listening.

International qualifications will be checked for appropriate matriculation to UK Higher Education undergraduate programmes.

ABOUT THE PROGRAMME

What is Computing & Electronics?

This programme is designed to provide a broad education encompassing the principles, techniques and practices in computing & electronics which will equip students with the necessary knowledge and skills to obtain employment in the computing and/or electronics industry

Computing & Electronics at UEL

In addition to the university's computing facilities, the School has a large PC based network which offers a range of engineering software packages including Computer Aided Design.

The electronics and microprocessor laboratories give students the opportunity to merge the two disciplines – Computing and Electronics

Programme structure

The normal modes of attendance are three years of full-time study or four years in the sandwich mode. The Sandwich option requires an industrial placement between years two and three. The programme is modular and is based on six modules of study each year.

Learning environment

The programme benefits from access to purpose built laboratories and a computer suite for use by students studying Computing and Electronics based programmes. Teaching is delivered through formal lectures, tutorials, and laboratory sessions. Lectures are supported by programme notes that allow students to concentrate on the lecture and to aid independent study. Team work is encouraged and practiced in modules

Assessment

Assessment varies from module to module but will include examinations, coursework, project work, laboratory reports and tests of competence in theoretical and practical sessions.

Work experience/placement opportunities

The School has strong links with industry and in conjunction with the careers office hosts a number of visits at which informal interviews for full and part-time employment opportunities take place. We have an Industrial Placement Tutor who will assist in making applications.

Project work

Project work is an important feature of this programme. Throughout your studies you will undertake small projects as part of the module assessment. During the final year of the programme students will be required to complete a project in the form of independent research and study of a computing/electronic engineering problem. This project will be supervised by a member of staff with an interest in the subject and will normally include laboratory work. The project constitutes one quarter of the final year of the programme.

Added value

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IS THIS THE PROGRAMME FOR ME?

If you are interested in...

- Using computers to solve problems
- Computer programming
- Electronic engineering
- Computer networks

- Microprocessors
- Software engineering

If you enjoy...

- Learning new and changing technologies
- Developing solutions to problems
- Putting theory into practice
- Working as an individual and in a group
- Providing a technical service to others
- Investigation, experimentation and research

If you want...

- To gain experience in a wide range of computing applications
- To work in a computing related job
- To work in an electronic engineering related job
- To work in a computing and electronic engineering related job
- To gain a highly respected higher education qualification
- To become a credible candidate for employment in highly competitive market
- To further your study to MSc level programmes

Your future career

Opportunities are available in electronic engineering, computer programming and microprocessor based systems engineering.

How we support you

The School prides itself on its student support systems. We operate an open door policy with students encouraged to consult with their tutors. Personal Tutors and Programme Tutors will monitor your progress and provide assistance and advice with academic and personal problems. We are pleased for students to consult whichever tutor they are most comfortable talking to.

The School facilities include dedicated computer laboratories and equipment that you are free to use whenever it is not being used for a class. Each laboratory has a laboratory technician permanently on hand to help. All formal laboratory classes are supported by academics.

Employer links are maintained through our Industrial Liaison Group and employers are invited to attend the University to talk about careers.

Bonus factors

Computing & Electronics is studied at the Docklands Campus. Transport links are available via bus or tube linking Central London and major airports.

Our external examiner system provides a continuous check on the health of our programmes and is also used to provide feedback to final year project students. Industrial links and the

work of our industrial liaison panel maintains the currency of our programmes and thereby the employment and career paths of our students.

Outcomes

Programme aims and learning outcomes

What is this programme designed to achieve?

This program is designed to give you the opportunity to:

- Acquire the knowledge and skills necessary to work in the computing/electronic profession
- Apply electronic hardware and computer software to a range of technical problems
- Understand the complexities of modern computer based electronic systems
- Develop personal resources that enable investigation, experimentation and research.

What will you learn?

Knowledge

- Electronic Computer-Aided design
- Computer programming
- Computer organisation and architecture
- Electronic engineering principles
- Software Engineering
- Engineering mathematics
- Computer networking and communications
- Microprocessor configuration and interfacing
- Financial and Industrial Organisation

Thinking skills

- Problem analysis and problem solving
- Development of computer algorithms
- Development of microprocessor embedded systems
- Systems analysis and systems design
- Intellectual appreciation
- Learning, experimentation and research

Subject-Based Practical skills

- Interfacing computers and electronic system
- Laboratory testing and analysis
- Application of IT to problems

Skills for life and work (general skills)

- Communication

- Problem-solving
- Analytical skills
- Time Management
- Project planning and management

Structure

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. lecture, seminar and private study).

Credits are assigned to one of 5 levels:

- 0 - equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree programme
- 1 - equivalent in standard to the first year of a full-time undergraduate degree programme
- 2 - equivalent in standard to the second year of a full-time undergraduate degree programme
- 3 - equivalent in standard to the third year of a full-time undergraduate degree programme
- M - equivalent in standard to a Masters degree

Credit rating

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

Typical duration

The normal duration of this programme is three years full-time or four years sandwich. Although the programme is not offered on a part-time basis it may be possible for students to enrol on individual modules and so build up the required number of modules over a programme of more than three years. Students wishing to do this must establish an agreed personal programme of study with the Programme Tutor and be able to fit into the normal timetable. In certain cases it may be possible to obtain direct entry to the second level of the programme.

How the teaching year is divided

The teaching year is divided into two semesters of roughly equal length.

A typical full-time student will study the equivalent of 60 credits every semester.

What you will study when

There are no optional modules on this program. In each of years one and two, students study six 20-credit modules. In year three there are four 20-credit modules and one 40-credit module.

It is possible to bring together modules from one subject with modules from another to produce a combined programme. Subjects are offered in a variety of combinations:

- Single - 120 credits at levels one, two and three
- Major - 80 credits at levels one, two and three
- Joint - 60 credits at levels one, two and three
- Minor - 40 credits at levels one, two and three

Modules are defined as:

- Core - Must be taken
- Option - Select from a range of identified modules within the field
- University wide option - Select from a wide range of modules across the University

The following table shows the core and optional requirements for the single and major routes for this programme.

Level	Module Code	Module title	Credit	Status Single	Status Major
1	EE1003	Engineering Computing I	20	core	-
1	EE1007	Engineering Science and Applications	20	core	-
1	EE1004	Electronic and Digital Principles	20	core	core
1	EE1002	Circuit Theory	20	core	core
1	EE1001	Study Skills for Academic Learning	20	core	core
1	EE1303	Computer Organisation	20	core	core
2	EE2301	Engineering Computing II	20	core	-
2	EE2003	Software Engineering & Microprocessors	20	core	-
2	EE2304	Operating Systems	20	core	core
2	EE2006	Analogue and Digital Electronics	20	core	core
2	EE2002	Analogue & Digital Communications	20	core	core
2	EE2004	Employability Skills & Group Design	20	core	core
3	EE3301	Integrated Systems Design	20	core	core
3	EE3007	Communications Circuits	20	core	option
3	EE3302	Further Applications and Programming	20	core	-
3	EE3006	Computer Networks & Data Communications	20	core	option
3	EE3008	Project and Research Skills	40	core	core

Requirements for gaining an award

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Degree Classification

Where a student is eligible for an Honours degree, and has gained a minimum of 240 UEL credits at level 2 or level 3 on the programme, including a minimum of 120 UEL credits at level 3, the award classification is determined by calculating:

$$\text{The arithmetic mean of the best 100 credits at level 3} \times 2/3 + \text{The arithmetic mean of the next best 100 credits at levels 2 and/or 3} \times 1/3$$

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

Assessment

Teaching, learning and assessment

Teaching and learning

Knowledge is developed through

- Lectures and Seminars
- Assignments
- Projects
- Laboratory work

Thinking skills are developed through

- Problem analysis and problem solving
- Development of computer algorithms
- Critical assessment of information
- Implementation of computer based solutions

Practical skills are developed through

- Computer and electronics laboratory and experimental work
- Group work

Skills for life and work (general skills) are developed through

- Written communication exercises

- Individual and group working activities

Assessment

Knowledge is assessed by

- Time constrained examinations
- Laboratory exercises
- Assignments and project work

Thinking skills are assessed by

- Approach to solving problems
- Analysis of alternative solutions
- Practical solutions to complex tasks
- Development of original and novel solutions

Practical skills are assessed by

- Laboratory reports and experimental assessment
- Group work
- Application to practical problem-solving

Skills for life and work (general skills) are assessed by

- Oral Presentations
- Written communication exercises
- Team exercises
- Research and problem solving

Quality

How we assure the quality of this programme

Before this programme started

Before the 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 University's Quality Standing 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

Listening to the views of students

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

- Module evaluations
- Staff/Student representation on programme committees (meeting 2 times per year)

- Field feedback information analysis for programme and module evaluation

Students are notified of the action taken through:

- Circulating the Minutes of the programme committee
- Providing details on the programme noticeboard

Listening to the views of others

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

- Feedback from external examiners
- Industrial Liaison committee
- Information from professional bodies

Further Information

Alternative locations for studying this programme

Location	Which elements?	Taught by UEL staff	Taught by local staff	Method of Delivery
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

Where you can find further information

Further information about this programme is available from:

- The UEL web site
- The student handbook
- Module study guides
- UEL Manual of Regulations and Policies 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/
- School of Computing & Technology web pages http://www.uel.ac.uk/cite