Software Engineering

This version of the programme is no longer recruiting. Please see the specification for BSc (Hons) Software Engineering.

Final award	B.Sc. (Hons)
Intermediate awards available	Cert. H.E., Dip. H.E.
UCAS code	
Details of professional body accreditation	N/A
Relevant QAA Benchmark statements	Computing
Date specification last up-dated	July 2013

Profile

The summary - UCAS programme profile

BANNER BOX:

Thinking about a career in computing? With a software engineering degree from UEL, the future's bright!

ENTRY REQUIREMENTS

- 200 UCAS tariff points or equivalent
- Equivalent overseas qualifications IELTS 6.0 or equivalent
- Relevant Access programme
- Mature students, without appropriate academic qualifications but with relevant work experience, attend for interview and aptitude test

For FTMS

- students must has passed the SPM or equivalent with minimum grades of C/6 and one of the following:
- A levels
- STMP (minimum of two (2) principal passes including general paper)
- MICSS

ABOUT THE PROGRAMME

What is Software Engineering?

All types of computer systems are now an important part of our lives, with well-engineered, reliable and usable systems crucial to the survival of most organisations. People, who can design, implement and maintain these ever-evolving systems are in constant demand. Studying in the field of computing is challenging and enjoyable, and can lead to a rewarding

career. At UEL you can study the Software Engineering degree which provides the option of developing knowledge in such specialised areas as Business Information Systems, Computer Networking, Internet Technologies, Software Engineering and Communications Systems Security. This wide coverage area is provided by the number of options uniquely available only to students on the Software Engineering.

Software Engineering at UEL

The Software Engineering at UEL allows you to study a variety of subjects, including the development of information systems, programming, computer architecture, operating systems, networking and the business contexts in which computer-based information systems are used. In addition the programme also offers students the option of gaining knowledge or specialise in such areas as Computer Networking Communications Security and Surveillance, and Project Management. Emphasis is placed on the acquisition of practical-based skills, including the opportunity for one year's work experience (for London campus students only), which provides a solid foundation for a career in computing.

Programme structure

Software engineering programmes are three or four years in length, as the sandwich degrees include a one-year work placement. If you want to change to one of our specialised degrees, rather than the Computing degree, this is easy to arrange. Students are able to work in groups to develop computer-based solutions to real-life situations, often in co-operation with local companies.

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 study of networking and operating system environments such as Windows and Unix. Students are provided with software tools for programming, database development, computer-aided software engineering, Internet access and Web-based development. The virtual learning environment UELPlus is used to give extra support to students and allow easy communication between students and staff. The placement year (which can take place abroad) is the ideal opportunity to add to the skills gained during the first two years of the programme.

Assessment

A variety of assessment methods are used. Some modules are entirely assessed by coursework, although most modules are assessed by 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 be multiple choice tests or more traditional unseen questions.

Work experience/placement opportunities

On our sandwich programmes (if you are a London campus student), students have the option to undertake a 48 week industrial placement during their third year. 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 are offered permanent employment by their placement organisation when they graduate. In addition to enhancing employment prospects, the placement provides a valuable learning experience, the results of which feed into our students' final year of study.

This does not apply to our collaborative franchise programmes as many of these have local arrangements.

Project work

Students complete a project in their final year. 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.

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 can be used to solve problems
- finding out more about what happens 'behind' the computer screen
- developing and using technical skills
- using specialised skills to develop programs

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

If you want...

- the opportunity to work in a well-rewarded and exciting 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

...then one of our programmes in software engineering could be for you!

Your future career

There is still a significant shortage of up-to-date computing skills in the UK. Organisations need to have access to these skills to make best use of computing and internet resources.

Graduates of Software Engineering degree programmes have the skills and knowledge to develop high quality software applications, leading to a career in the wide-ranging software development industry.

For graduates who wish to continue their studies at postgraduate level, the computing degree programmes provide a suitable entry route to a variety of Masters programmes, both at UEL and elsewhere.

How we support you

- Programme Leader support throughout the programme duration
- Personal tutor support throughout the programme
- Support for development of study skills, preparation for employment and research
- Placement Office with well-established links with employers to provide support for finding placements (Does not apply to collaborative franchise programmes)
- Specialist support for dyslexia and English as a second language
- Student advice services for accommodation, finance, careers, IT training, learning resources.

Bonus factors

The proximity of London means that UEL is ideally placed for developing links with a wide range of well-established, prestigious and innovative employers. The Knowledge Dock Centre based at the Docklands Campus provides a natural channel between business and higher education, by making the knowledge and expertise of UEL available to local employers.

Outcomes

Programme aims and learning outcomes

What is this programme designed to achieve?

This programme is designed to give you the opportunity to:

- Gain appropriate knowledge and skills base to pursue a career managing and developing information systems in a contemporary business context
- Gain an understanding of the operational, strategic and practical issues in information systems currently relevant to small, medium and large enterprises
- Learn and work both independently and within groups
- Be aware of the management, economic, legal, social, professional and ethical issues relating to information systems
- Develop the necessary study skills and knowledge to pursue further study

What will you learn?

All learning outcomes are covered in the programme's single honours route and where Maj, J and/or Min is shown against a learning outcome, this confirms that the learning outcome is covered in the Major, Joint and/or Minor routes offered.

Knowledge

- How to design and implement information systems (Maj, J)
- How computer hardware and software work together to provide a platform for information systems
- How information systems can be used in a business context (Maj, J and Min)
- How IT projects can be strategically managed and developed (Maj)

Thinking skills

- Problem solving (Maj, J and Min)
- Evaluation and critical analysis (Maj, J)
- Self-appraisal and review of personal practice (Maj)

Subject-Based Practical skills

- Use of range of specialised computer technology, such as: databases (Maj), web site and other development packages (Maj, J and Min)
- Preparation of essays, reports and presentations (Maj, J and Min)
- Production of major self-directed project (Maj)

Skills for life and work (general skills)

- Communication skills (Maj, J and Min)
- Time management (Maj, J and Min)
- Learning and working both independently and in groups (Maj, J and Min)

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 typical duration of this programme is three years full-time, four years sandwich or five 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.

How the teaching year is divided

The teaching year begins in September and ends in June but some programmes also allow students to join at the start of Semester B, in February. A student, normally registering for 6 modules in one year (3 modules in each Semester) would do so in a full-time attendance mode of study and a student registering for up to 4 modules in one year (2 modules in each Semester) would do so in part-time attendance mode of study.

What you will study when

This programme is part of a modular degree scheme. A student registered in a full-time attendance mode will take six 20 credit modules per year in level 1, six 20 credit modules per year in level 2 and four 20 credit modules plus one 40 credit module per year in level 3. An honours degree student will complete six modules at level one, six at level 2 and five at level 3. The university offers Subjects 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 module within the field
University Wide Option Select from a wide range of university wide options

The following are the core and optional requirements for the single and major pathways for this programme

LEVEL	MODULE CODE	TITLE	Skills	CREDITS	STATUS SINGLE	STATUS MAJOR	STATUS JOINT	STATUS MINOR
						(not offered to collaborative partners)	(not offered to collaborative partners)	(not offered to collaborative partners)
1	SD1042	Introduction to Software Development		20	Core	Core	Core	Core
1	CN1041	Academic Skills for Computing	Y	20	Core	Core	Option	
1	IM1024	Web Authoring and Web Management		20	Core			
1	CN1044	Introduction to Computer Systems		20	Core			
1	IM1045	Information Systems		20	Core	Core	Core	Core
1	CN1047	Introduction to Computer Networks		20	Core	Core	Option	
2	IM2042	Information Systems Modelling and Design		20	Core	Core	Core	Op
2	CN2053	Operating Systems		20	Core			
2	CN2041	Professional Issues in ICT	Y	20	Core	Core	Option	
2	SD2054	Software Development		20	Core	Core	Core	Co
2	IM2044	Usability Engineering		20	Core			
2	SD2052	Database Systems		20	Core	Core	Option	Op

3	SD3043	Advanced Information Systems Development		20	Core	Option	Core	Opt
3	CN3044	Network Programming		20	Core	Option	Option	Opt
3	SD3048	Programming Paradigms		20	Core	Option	Option	Opt
3	SD3049	Formal Methods in Software Engineering		20	Core	Option	Option	Opt
3	CN3070	Project: Research and Implementation	Y	40	Core	Core	Option	

Requirements for gaining an award

In order to gain an honours degree you will need to obtain 360 credits including:

- A minimum of 120 credits at level one or higher
- A minimum of 120 credits at level two or higher
- A minimum of 120 credits at level three or higher

In order to gain an ordinary degree you will need to obtain a minimum of 300 credits including:

- A minimum of 120 credits at level one or higher
- A minimum of 120 credits at level two or higher
- A minimum of 60 credits at level three or higher

In order to gain a Diploma of Higher Education you will need to obtain at least 240 credits including a minimum of 120 credits at level one or higher and 120 credits at level two or higher

In order to gain a Certificate of Higher Education you will need to obtain 120 credits at level one or higher

In order to gain an Associate Certificate you will need to obtain a minimum of 20 credits at level one or higher

In order to gain a Foundation Degree you will need to obtain a minimum of 240 credits including:

A minimum of 120 credits at level one or higher
A minimum of 120 credits at level two or higher
(A Foundation degree is linked to a named Honours degree onto which a student may progress after successful completion of the Foundation degree)

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:

The arithmetic mean of the best 100 credits at level 3	× 2/3 +	The arithmetic mean of the next best 100 credits at levels 2 and/or 3	× 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

Foundation degree classification

Where a student is eligible for a Foundation degree, the award classification is determined by calculating the arithmetic mean of all marks obtained for modules at level 1 or higher contributing to the programme 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%	Distinction
55% - 69%	Merit
40% - 54%	Pass
0% - 39%	Not passed

Assessment

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 Resource 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 word processors and spreadsheets
- use of specialised IT applications such as program development environments and CASE tools
- investigation website development

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

- working in groups to complete work set, such as presentations
- working during sandwich year as placement student
- managing time to complete assessments by deadlines

Assessment

Knowledge is assessed by

- examinations, both unseen and based on previously supplied case studies
- multiple choice tests
- extended essays and reports

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 placement year
- ability to work to time constraints

Quality

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.

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 and teaching staff, year and programme tutors
- Student representation on programme committees (meeting each semester)

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 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:

Our links with the British Computer Society (www.bcs.org.uk) ensure that our staff and students are aware of the latest trends in industry.

- The UEL web site (http://www.uel.ac.uk)
- The programme handbook
- Module study guides
- UEL Manual of General 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/
- UEL Guide to Undergraduate Programmes
- School of Architecture, Computing and Engineering at UEL http://www.uel.ac.uk/cite/computing/