

## PROGRAMME SPECIFICATION

### Course Record Information

Name and level of final & intermediate awards:	Awards determined by module credits achieved after progressing onto the parent degree course.
Awarding body/Institution:	University of Westminster
Location of delivery:	Central London (Cavendish)
Mode of study:	Full-time
JACS Code:	H6
UCAS Code:	BEng (Hons) Computer Systems Engineering with Foundation H653 BSc (Hons) Computer Systems Engineering with Foundation H656 BSc (Hons) Computer Networks and Communications with Foundation G427 BSc (Hons) Computer Network Security with Foundation G425 BEng (Hons) Electronic Engineering with Foundation H608 BSc (Hons) Electronic Engineering with Foundation H607
QAA subject benchmarking group:	N/A (Foundation Year only)
Professional body accreditation:	IET (Institution of Engineering and Technology)
Course leader:	Katerina Christofylaki
Date of initial course approval/last review:	2009
Date of Programme Specification:	2014

### Admissions Requirements

Applicants for the course should have obtained a recognised further education qualification. The course caters for two main categories of students:

- people who have passed non-technological subjects at advanced level, and wish to convert to Electronics, Computer Systems & Networks,
- those who have passed technological subjects at advanced level, but with insufficient grades for entry to Level 4 of the undergraduate courses offered by the Department.

Accordingly, a wide range of qualifications are accepted such as appropriate grades in:

- two A-level passes in any subject at Grade BC or equivalent (180 UCAS Points)

- BTEC National Diploma (MMP)
- ACCESS course (48 Credits at Level 3)
- International Baccalaureate (26 Points)

In addition, students should have GCSE grade C passes (or equivalent) in English and Mathematics. Wherever possible, applicants are interviewed and given a mathematics test. Those accepted on the course will be enrolled on a pathway leading to the BEng or BSc degrees offered by the Department.

In the case of applicants with non-standard qualifications, particularly overseas students who cannot be interviewed, it is possible to make an offer for entry to Level 3, but allow the student to attend classes at Level 4 for the first few weeks. During this time, Level 4 module leaders are asked by the Level 4 Course Leader to assess the student's progress, and if it is satisfactory, the enrolment is transferred to Level 4. If not, study must continue at Level 3.

### **Aims of the course**

The Foundation year aims to:

- provide the opportunity for students from varied backgrounds to acquire the knowledge and skills necessary to progress successfully to completion of an undergraduate degree course within the Department of Engineering;
- promote interest in, and enthusiasm for, the study of electronic systems engineering;
- balance the desire for wide access with the challenging nature of the BEng/BSc courses, so that as many people as possible are given the opportunity to prepare for degree places, but only those demonstrably suitable for BEng/BSc Honours study are permitted to continue;
- provide modules whose content and delivery style are suited to the diverse backgrounds and previous experience of foundation students, whilst preparing them for the pace and standards of Level 4 BEng/BSc courses.

### **Employment and Further Study Opportunities**

The planned destination is the BEng and BSc degrees taught within the Department of Engineering.

## COURSE STRUCTURE

The overall structure of the Electronics Foundation course conforms to the University's modular degree format. The course consists of six core modules, covering mathematics, electronics, programming and practical skills required for BEng/BSc study, plus options for students to improve their transferrable skills, communication and study skills or English. The overall course structure is:

Core Modules	
Semester 1	Semester 2
EEEL300 Algebra and Trigonometry	EEEL305 Complex numbers and Calculus <b>OR</b> ECSC301 Discrete and Continuous Mathematics
EECT300 The Computer	EEEL320 Introduction to Communications
EICG301 Introduction to Programming and Games Design Project (30 Credit Module)	
EEEL315 Fundamentals of Electronics	
Optional Modules	
ECSC303 Professional and Transferable Skills (semester 1) <b>OR</b> EBSY301 Thinking About Technology (semester 2) <b>OR</b> SACE300 - Academic English 3	

All modules are 15 credit modules with the exception of Introduction to Programming and Games Design Project which is a 30-credit module. In the second semester, depending on your performance on Algebra and Trigonometry module you either do Complex numbers and Calculus or Discrete and Continuous Mathematics module.

### Academic Regulations

The Electronics Foundation operates in accordance with the University's Academic Regulations and the *Framework for Higher Education Qualifications in England, Wales and Northern Ireland* published by the Quality Assurance Agency for Higher Education (QAA) in 2008.

All students should make sure that they access a copy of the current edition of the general University handbook called **Essential Westminster 2014/15** which is available at [westminster.ac.uk/essential-westminster](http://westminster.ac.uk/essential-westminster). The following regulations should be read in conjunction with the *Modular Framework for Undergraduate Courses* and relevant sections of the current *Handbook of Academic Regulations*, available at [westminster.ac.uk/academic-regulations](http://westminster.ac.uk/academic-regulations).

## Learning Outcomes

Learning outcomes are statements on what successful students have achieved as the result of learning. Upon successful completion of the Foundation year, students will be able to demonstrate commitment to degree-level study in the area of electronic systems. In addition, they would be able to grasp:

- **Knowledge and Understanding of**
  - identifying the physical principles at work in simple engineering problems, and
  - applying a range of mathematical techniques to model their behaviour, making appropriate assumptions;
  
- **Specific Skills**
  - use electronic laboratory equipment safely and effectively
  
- **Key Transferable skills**
  - follow a logical progression of ideas in mathematical calculations, and in the design and analysis of experiments
  - communicate technical ideas orally and in writing

## Learning, Teaching and Assessment Methods

### Learning and Teaching

The Foundation course has been structured to accept students from a wide variety of learning backgrounds. Student centred approach is pivotal to the design of the Foundation course. Successful teaching methods have been developed over the years for teaching the Electronics Foundation. As far as possible, these are the same as those that students will encounter in subsequent BSc/BEng modules

The following teaching methods are used:

- Lecture / seminar sessions
- Laboratories
- Problem sheets & investigations
- On-line learning

Often sessions also provide useful opportunities for students to ask about other aspects of regulations and procedures they may not understand. These are further supplemented, in many cases, by the use of the Blackboard virtual learning environment and on-line learning to disseminate additional material and in tutorial tests.

Lecturers provide feedback on students' work throughout the course. This may be individual or for the whole class.

### Assessment

Various methods are used to assess different aspects of student's performance. These assessment patterns are similar to those used in higher years. All modules have In-Course Assessment (ICA), which consists of a mixture of regular tests, laboratory work, log books, written assignments, presentations, reports and individualised homework exercises. Most modules have at least two formal aspects of assessment (e.g. examination and coursework). The modules have specific percentages assigned to various "aspects of assessment" which make up the final mark. There are minimum marks for each aspect and this means, for

example, that students cannot make up for a very poor exam mark by getting an excellent coursework mark.

### **Assessment of Modules**

A *pass* in a module is achieved when the overall mark is greater than or equal to 40%; with at least 30% in the final assessment and any qualifying marks and/or sets achieved as detailed in the module handbook.

### **Condoned Credit at Level 3**

A student may be awarded condoned credit at Level 3, on the condition that the failed element(s) of assessment has been attempted at both the first opportunity, and where he/she has achieved:

- (a) an overall module mark of greater than or equal to 30% but less than 40%;
- (b) an overall mark of 40% or greater but not reached the required qualifying mark(s) and/or qualifying set(s) as detailed in the module handbook.

Where a student is awarded condoned credit, the recorded module mark will be capped at 40%. Condoned credit will count towards any credit limits for specified awards. Where a student is awarded condoned credit in a module but subsequently achieves an overall pass at a re-take, credit may contribute only once to an award.

### **Referrals**

Referrals will not be given for Electronics Foundation modules and students repeat the modules they failed in the following academic year.

### **Progression Requirements**

The overall criterion is that the students are likely to be successful in any of the courses to which they are allowed to progress. To that end, the Progression Board will take into account the entire academic profile of each student.

Students must normally pass 120 credits of which not more than 15 are condoned. Exceptionally, students who have 30 credits condoned or have passed only 105 credits of which none are condoned may be allowed to progress at the discretion of the Progression Board.

Guidelines for the individual courses are:

BEng Electronic Engineering BEng Computer Systems Engineering	Must have passed EEEL305 Complex Numbers and Calculus with at least 60%. Average mark across 120 credits should be at least 60%
BSc Electronic Engineering (on trial for BEng)	Must have passed EEEL305 Complex Numbers and Calculus with at least 55%. Average mark across 120 credits should be at least 55%
BSc Electronic Engineering	Must have passed either EEEL305 Complex Numbers and Calculus or ECSC301 Discrete and Continuous Mathematics. Average mark across 120 credits should be at least 50%
BSc Computer System Engineering	Must have passed: EECT300 The Computer, EICG301 Introduction to Programming and Games Design Project and EEEL315 Fundamentals of Electronics. Average mark across 120 credits should be at least 40%
BSc Computer Networks and Communications BSc Computer Network Security	Must have passed both EECT300 The Computer and EICG301 Introduction to Programming and Games Design Project. Average mark across 120 credits should be at least 40%

### Reference Points for the course

#### Internally

- BEng and BSc degree programs as taught by the Department of Engineering
- The University teaching and learning policy
- The University Quality Assurance Handbook
- The University Modular Framework for foundation courses

#### Externally

- The GCE A-Level syllabuses for Maths and Physics. (There are no benchmark statements for foundation courses)

## **SUPPORT FOR STUDENTS**

On arrival, a Welcome and Orientation programme of events, will introduce students to the staff responsible for the course, the campus on which they will be studying, the Library and IT facilities and to the Registry office. Students will be provided with the Course Handbook, which provides detailed information about the course. Students are allocated a personal tutor who can provide advice and guidance on academic matters.

Learning support includes four Libraries, each holding a collection of resources related to the subjects of their Faculty. Students can search the entire library collection online through the Library Search service to find and reserve printed books, and access electronic resources (databases, e-books, e-journals)

Students can choose to study in the libraries, which have areas of silent and group study, desktop computers, laptops for loan, photocopying and printing services. They can also choose from several computer rooms at each campus where desktop computers are available with the general and specialist software that supports courses taught at their Faculty. Students can also securely connect their own laptops and mobile devices to the University wireless network.

The University uses a Virtual Learning Environment called Blackboard where students can access course materials and communicate with staff and other students via message boards.

At University level, Services for Students provide advice and guidance on accommodation, financial and legal matters, personal counselling, health and disability issues, careers and the chaplaincy providing multi-faith guidance. The International Office provides particular support for international students. The University of Westminster Students' Union also provides a range of facilities to support all students during their time at the University.

### **Personal Tutoring**

You will be assigned a personal tutor during the Welcome and Orientation week. There will be regular meetings arranged throughout the academic year where your personal tutor will talk to you about how you are progressing, and deal with any problems you may have. When more specialised advice is required to guide you, it would be appropriate for the personal tutor to refer you to the University's Counselling and Advisory Service or to the Department's Senior Tutor. Similarly the Course Leaders act as a point of reference in academic matters. You should inform your tutor if you need to be absent for more than a short time. Your tutor will be a member of lecturing staff from the Department, although maybe not someone who teaches you this year.

## QUALITY MANAGEMENT & ENHANCEMENT

### Course Management

The course is managed by staff from the Department of Engineering in the Faculty of Science and Technology. The Course Team consists of lecturers on individual modules, the Head of Department and technical support staff. The day-to-day running of each course is the responsibility of the Course Leader, while the strategic direction of the courses and the allocation of staff is the responsibility of the Head of the Department. The Dean of the Faculty of Science and Technology takes overall responsibility for all departments within this Faculty.

### Course approval, monitoring and review

The course was initially approved by a University Validation Panel in 2009. The Panel included internal peers from the University and external subject specialists from academia and industry to ensure the comparability of the course to those offered in other Universities and the relevance to employers. Periodic Course Review helps to ensure that the curriculum is up-to-date and that the skills gained on the course continue to be relevant to employers.

The course is monitored each year by the Faculty to ensure it is running effectively and that issues which might affect the student experience have been appropriately addressed. Staff will consider evidence about the course, including the outcomes from each Course Committee, evidence of student progression and achievement and the reports from External Examiners, to evaluate the effectiveness of the course. The Annual Monitoring Sub-Committee considers the action plans resulting from this process and the outcomes are reported to the Academic Council, which has overall responsibility for the maintenance of quality and standards in the University.

### Student involvement in Quality Assurance and Enhancement

Student feedback is important to the University and student comment is taken seriously. Student feedback is gathered in a variety of ways. The most formal mechanism for feedback on the course is the Course Committee. Student representatives will be elected to sit on the Committee to represent the views of their peer group in various discussions. The University and the Students' Union work together to provide a full induction to the role of the Course Committee.

All students are invited to complete a Module Feedback Questionnaire before the end of each module. The feedback from this, will inform the Module Leader on the effectiveness of the module and highlight areas that could be enhanced. The University also has an annual Student Experience Survey which provides valuable feedback about a range of University services.

Students meet with Review Panels when the periodic review of the course is conducted to provide oral feedback on their experience on the course. Student feedback from course committees is part of the Faculty's quality assurance evidence base.

For more information about this course, refer to:

Web site: <http://www.westminster.ac.uk/courses/subjects/electronic-engineering/undergraduate-courses>

**Please note** – This programme specification provides a concise summary of the main features of the course and the learning outcomes that a student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. This specification should be read in conjunction with the Course Handbook provided to students and Module Handbooks which provide more detailed information on the specific learning outcomes, content, teaching, learning and assessment methods for each module.