



"WESTMINSTER'S A GREAT CHOICE – IT'S IN A CENTRAL LOCATION, AND THE COURSES ARE REALLY GOOD."

**ARATHI SUNDARRAM**, INDIA  
ELECTRONIC ENGINEERING  
BEng HONOURS

» Formed through the merger of the School of Informatics and Harrow School of Computer Science, the School of Electronics and Computer Science currently has over 1,700 undergraduate students studying on courses that develop their applied skills and prepare them for professional life in the computing, electronics or multimedia industries.



"I KNOW FROM EXPERIENCE JUST HOW IMPORTANT A DEGREE IS THESE DAYS."

EMMANUEL FRANKLIN  
TECHNICAL CONSULTANT,  
NEXT DOCS

» All undergraduate teaching is now based at our Cavendish Campus in the heart of London, close to major industry headquarters and the City. Expansion of the Cavendish Campus has enabled the School to be based on one site, increasing your access to resources and your opportunity to take modules across the range of courses the School offers.

» We offer a wide range of undergraduate degree courses, from Electronic Engineering and Computer Systems Engineering, to Mobile and Web Computing and Computer Games Development. Our Computer Systems Engineering courses are accredited by the Institution of Engineering and Technology (IET), so graduates can become Chartered/Incorporated Engineers after gaining professional experience.

» As well as the general Campus facilities the School has dozens of laboratories, offering you access to Windows, Unix, Novell and NT workstations, supported by high-bandwidth networks. We also have dedicated network development and testing rooms, and a fully equipped advanced multimedia laboratory. All of these are supported by a strong team of specialist technicians to ensure you get the most out of these technologies.

» Our international reputation is supported through collaborations in a range of countries including Bulgaria, China, Germany, Greece, Holland, India, Italy, Macau, Nigeria and Poland. Research and student exchange programmes are encouraged through our network of partner institutions. We work with the Westminster International University in Tashkent to offer undergraduate courses in Business Computing, and validate degrees delivered by IIT Sri Lanka.

Our research is focused in four main areas – electronic and communication engineering, operational research and intelligent systems, parallel and distributed computing, and semantic computing and systems engineering. We are the only London partner of the UK National Grid Service (high performance computing). Projects in these areas receive research funding from a variety of sources including knowledge transfer partnerships, research councils and consultancy.

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For more information about Electronics and Computer Science courses, visit the School of Electronics and Computer Science website at [westminster.ac.uk/ecs](http://westminster.ac.uk/ecs)

The course provides a solid grounding in the design and realisation of modern embedded systems, building upon more than two decades of experience in digital signal processing and electronic system design within the department. Embedded systems exist in every part of modern life, including portable digital cameras, kitchen appliances, collision avoidance systems in cars, and robotics. This has created a surge in demand for highly skilled engineers who can program computers and utilise and implement hardware systems. These degrees give you the skills required by engineers to efficiently combine software and hardware solutions and create the next generation of embedded electronic devices.

#### Course content

This course shares a common Year 1 (Credit Level 4) with the Electronics Engineering MEng/BEng Honours degree. Project-based learning plays a large part in the courses, with project modules highly valued by employers. In Year 2 (Credit Level 5) these include a computer network project, and the Micromouse competition where teams of students vie to build the fastest maze-solving robot mouse. In Year 3 (Credit Level 6) you take an individual project of your choice, as well as a group project tackling the design of a very large scale integrated (VLSI) programmable processor.

You can transfer to the Electronic Engineering MEng/BEng Honours at the end of the common first year. Subject to performance, it is possible to transfer from the BEng to the MEng Computer Systems Engineering at the end of Year 2 (Credit Level 5).

#### Year 1 (Credit Level 4)

Subjects of study include: Audio Processing Using an Embedded Microcomputer • Data Communications and Networks • Digital and Analog Circuits • Engineering Science and Maths • Linear System Analysis • Programming

#### Year 2 (Credit Level 5)

Subjects of study include: Computer Networks\* • Digital Microelectronics\* • Event-Driven and GUI Programming • Micromouse Maze-Solving Competition\* • Network Software Engineering • Operating Systems • Professional Employability Skills • Signal and System Analysis

\* these subjects are taught as group projects

#### Sandwich placement year

You have the chance to take a placement in industry between Year 2 and Year 3 (Credit Levels 5 and 6). This gives you practical experience in the workplace and a competitive edge in the job market. It contributes to your professional development towards Chartered Engineer status.

#### Year 3 (Credit Level 6)

Subjects of study include: Advanced Systems Analysis and Design (MEng only) • Algorithm Realisation (BEng only) • Business Finance and Management • Embedded Processor Architecture • Individual Project • Mobile Platform Programming • Real-Time Embedded Systems • Robotic System Design

#### Year 4 (Credit Level 7) MEng

Subjects of study include: Embedded Media Processing • Industrial Group Project • Multirate DSP • Video and Image Processing • plus one option module from the other MSc modules

#### Length of course

MEng: four-year, full-time; five-year, full-time sandwich  
BEng: three-year, full-time; four-year, full-time sandwich or Foundation

#### UCAS codes

MEng: H655  
BEng: H650

#### Location

Central London (Cavendish)

#### Professional recognition

These courses are accredited by the Institution of Engineering and Technology (IET), enabling you, as a graduate, to become a Chartered Engineer after a period of professional experience. In the case of the BEng award, further study to MSc level is also required.

#### Teaching and assessment

You will receive advice and support from supervisors and other members of staff, who will help you to achieve your aims and get the most out of your education.

#### Associated careers

Graduates have gone on to work for the BBC, British Aerospace, BT, GEC and Nokia, as well as for smaller private companies. Some have started up their own businesses in manufacturing or consultancy. For information about the Foundation year see p81.

#### Typical offer for September 2011

Qualification type	Grade/points
A Levels	BBB to include Maths
International Baccalaureate	32 points to include Maths at Higher Level
BTEC National Diploma	DDM in Engineering
Advanced Diploma	Grade B in Engineering and relevant ASL, including Certificate in Maths for Engineering or A2 Maths

See also standard entry requirements on p206.

**Computer systems engineering is a growing market in today's computer industry. Embedded systems have become widespread in industry and can be found in almost all modern consumer devices, from washing machines to cars. This course focuses on three main areas – the computer system, embedded systems and program development. Its aims are to create strong computer-based engineers who are needed in both industry and research.**

## Year 1 (Credit Level 4)

The course focuses on the fundamental topics that form the basis for a complete knowledge of a computer system and its operation, including programming, computer organisation (including network aspects), and digital systems, and some of these modules are project based.

Subjects of study include: Audio Processing Using an Embedded Microcomputer • Computer Networks and Communications • Digital Systems • Electronics and Circuits • Mathematics • Programming

## Year 2 (Credit Level 5)

You are introduced via three group-based project modules to the design and implementation of sequential circuits using field-programmable gate arrays, embedded microprocessor systems, and data transmission, giving you hands-on experience in the implementation of these advanced technologies. Software design is also included.

Subjects of study include: Computer Networks • Computer Systems Engineering • Event-Driven and GUI Programming • FPGA Design\* • Micromouse Maze-Solving Competition\* • Network Software Engineering • Operating Systems • Professional Employability Skills

\* these subjects are taught as group projects

## Sandwich placement year

A placement in industry may be taken between Year 2 and Year 3 (Credit Levels 5 and 6). This gives you practical experience in the workplace and a competitive edge in the job market. It contributes to your professional development towards Incorporated Engineer status.

## Year 3 (Credit Level 6)

Advanced topics cover the design and the performance of computers, the design of real-time systems, and making the designs safe and secure. There are also modules dealing with software, networks and industrial project management. This level culminates with you developing a complete project using the engineering knowledge and skills developed during the course.

Subjects of study include: Advanced Networks • Business Finance and Management • Computer Architecture and Performance • Concurrent Programming • Individual Project • Real-Time and Embedded Systems • Safety and Security in Systems Design

## Length of course

Three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

## UCAS codes

H657; with Foundation H656

## Location

Central London (Cavendish)

## Professional recognition

These courses are accredited by the Institution of Engineering and Technology (IET). This entitles you, after a period of experience, to become an Incorporated Engineer.

## Teaching and assessment

You will receive advice and support from supervisors and other members of staff, all of whom are available to help you achieve your aims and get the most out of your education.

## Associated careers

The shortage of professionals with suitable skills has led to many opportunities for you to take exciting, well-paid jobs. Engineers can be found in almost every area of human activity. Employers are looking for creative people with the breadth and technical expertise to take a good idea from conception through to a viable product. The range of skills provided gives an ideal grounding for many professions. For information about the Foundation year see p81.

## Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points
BTEC National Diploma/ Certificate	MMM/DD in Engineering or IT, to include Maths at Level 3
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also standard entry requirements on p206.

Communications technology requires knowledge of the interaction of hardware and software in complex networks. This course covers all aspects of computer networks, from the physical transmission of signals, through the protocols required for the safe transmission of data, to the end-to-end services built on the communications backbone. Wired and wireless networks are covered, and special emphasis is placed on the transportation of real-time audio and video media.

You can follow one of two course pathways; Communications focuses on support and services for wired and wireless communication systems, while Computer Systems focuses on computer architecture and safety and security in systems design.

### Course content

Westminster is a Cisco Networking Academy and this course allows you to register for CCNA (Cisco Certified Network Associate) exams. All Cisco-relevant material is covered in core modules throughout the course. You can transfer to the Computer Network Security BSc course at the end of the common first year.

### Year 1 (Credit Level 4)

Subjects of study include: Audio Processing Using an Embedded Microcomputer • Computer Networks and Communications • Digital Systems • Electronics and Circuits • Mathematics • Programming

### Year 2 (Credit Level 5)

Subjects of study common for both pathways include: Local and Wide-Area Networks • Network Software Engineering • Operating Systems • Professional Employability Skills

Communications pathway: Communication Systems

Computer Systems pathway: Computer Systems Engineering

### Sandwich placement year

You will have the opportunity to take a placement in industry between Year 2 and Year 3 (Credit Levels 5 and 6). This experience gives you practical experience in the workplace and a competitive edge in the job market. It contributes to your professional development towards Chartered Engineer status.

### Year 3 (Credit Level 6)

Subjects of study common for both pathways include: Business Finance and Management • Distributed Systems and Network Software • Enterprise Network Engineering • Individual Project • Multimedia Streaming

Communications pathway: Cellular Radio Networks  
• Mobile Radio Systems

Computer Systems pathway: Computer Architecture and Performance  
• Safety and Security in Systems Design

### Length of course

Three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

### UCAS codes

PG94; with Foundation G427

### Location

Central London (Cavendish)

### Teaching and assessment

You will receive advice and support from supervisors and other members of staff, all of whom are available to help you achieve your aims and get the most out of your education.

### Associated careers

This course equips you with the flexibility to work at different levels with networked communication systems, from digital modulation through network architecture, routing and management. The course draws from the strong traditions of teaching digital communications, networks and software engineering within the School, and will provide you with the understanding and experience needed for a career in network communications technology. For information about the Foundation year see p72.

### Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points
BTEC National Diploma/ Certificate	MMM/DD in Engineering or IT, to include Maths at level 3
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also standard entry requirements on p206.

**Security is a vital aspect of any networked system, especially as the dependency on network infrastructures has grown over the past few decades. This course builds on more than 10 years of experience in education in network design and support, and its aim is to produce network engineers with a strong background in security. The course focuses on three main aspects – communication, network design and implementation, and security.**

### Course content

Westminster is a Cisco Networking Academy and this course allows you to register for CCNA (Cisco Certified Network Associate) exams. All Cisco-relevant material is covered in core modules throughout the course. The emphasis is on 'hands-on' work at every level, enhancing the development of your engineering skills which are vital for today's market.

You can transfer to the Computer Networks and Communications BSc course at the end of the common first year.

### Year 1 (Credit Level 4)

In the first year the degree focuses on the fundamental principles of networking, computer hardware and software development. The aim is to create a solid foundation for the remainder of the course.

Subjects of study include: Audio Processing Using an Embedded Microcomputer • Computer Networks and Communications • Digital Systems • Electronics and Circuits • Mathematics • Programming

### Year 2 (Credit Level 5)

The course continues with the themes of network engineering and software development. Specialist modules look at the threats to a system's integrity, how they can be countered, and the practical implementation of encryption.

Subjects of study include: Applied Cryptography • Local and Wide-Area Networks • Network Software Engineering • Operating Systems • Professional Employability Skills • Threats and Counter Measures

### Sandwich placement year

You will have the opportunity to take a placement in industry between Year 2 and Year 3 (Credit Levels 5 and 6). This gives you practical experience in the workplace and a competitive edge in the job market. It contributes to your professional development towards Chartered Engineer status.

### Year 3 (Credit Level 6)

The network theme is further advanced and the issues of implementation, configuration and dealing with present day data streams (such as for multimedia applications) are addressed. There are specialist modules on planning and implementing secure systems, and on working on projects in an industrial environment, which will prepare you to analyse requirements, and design and implement a secure network system. You will also complete a major project involving these aspects.

Subjects of study include: Business Finance and Management • Distributed Systems and Network Software • Enterprise Network Engineering • Individual Project • Multimedia Streaming • Network Security Systems • Secure System Planning

### Length of course

Three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

### UCAS codes

G423; with Foundation G425

### Location

Central London (Cavendish)

### Teaching and assessment

You will receive advice and support from supervisors and other members of staff, all of whom are available to help you achieve your aims and get the most out of your education.

### Associated careers

Graduates from this course can work as network engineers and take on specific responsibility within a network team or as a team leader for the security aspects of that network. Jobs in industries such as banking, where security is of particular importance, would be particularly appropriate. For information about the Foundation year see p72.

### Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points (minimum)
BTEC National Diploma/Certificate	MMM/DD in Engineering or IT, to include Maths at Level 3
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also standard entry requirements on p206.

## Computer Science BSc Honours

This degree will give you the right IT skills and knowledge to be able to shape the future of businesses and organisations. The broadly-based course covers the areas of computer science, software development and information systems, providing an excellent basis for a rapidly changing environment. The key aspects of this course are its flexibility and the ability for you to build customised courses within the broad area of computer science. You will be able to follow recommended pathways in a range of computing areas.

### Course content

#### Year 1 (Credit Level 4)

The course shares this year with the Software Engineering MEng/BEng and Mobile and Web Computing MEng/BEng degrees. On completing this year you may change to either of these two courses.

Subjects of study include: Communication and Learning Skills

- Computer System Fundamentals
- Information Modelling
- Mathematics for Computing
- Programming Methodology
- Software Engineering Principles
- Web Technology

#### Year 2 (Credit Level 5)

Subjects of study include: Database Fundamentals • Object-Oriented Development • Professional Practice • Project Management • Web Programming • plus options from one of the following pathways: Artificial Intelligence • Business Information Systems • Web and Mobile, Network and Security

#### Sandwich placement year

The course offers you the opportunity to take a 12-month industrial placement between Year 2 and Year 3 (Credit Levels 5 and 6). This will give you an excellent opportunity to gain valuable industrial experience that will enhance your studies and give you a competitive edge in the job market.

#### Year 3 (Credit Level 6)

Subjects of study include: Project • between two and six options from one of the following pathways: Artificial Intelligence • Business Information Systems • Web and Mobile, Network and Security

- options from Software Engineering

### Length of course

Three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

### UCAS codes

G402; with Foundation G401

### Location

Central London (Cavendish)

### Teaching and assessment

The course combines lectures, tutorials, and practical sessions in the computer labs. All modules include course work assessment and some include exams.

### Associated careers

You will have tangible skills in system analysis, design and development, as well as knowledge in areas such as computer networks and security, artificial intelligence, and multimedia and general computing. You will become adaptable and flexible to suit the needs of employment in any general computing-related environment. For information about the Foundation year see p72.

### Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points
BTEC National Diploma/ Certificate	MWM/DD
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also standard entry requirements on p206.

Increasingly powerful mobile devices and widespread low-cost mobile broadband have led to a rapid increase in sophisticated mobile applications and services. This course provides the specialist skills and knowledge required for developing mobile, embedded, and web applications. It is ideal for those seeking to enter this new and exciting area of computing. The course will also give you an excellent grounding in software engineering and web development that will lead to many opportunities in information technology and business computing.

### Course content

The course explores the latest principals and practice in mobile and web computing. You will study mobile and wireless application architectures and development frameworks, and develop the programming and design skills needed to build distributed mobile and web applications. The course uses the latest tools and techniques, giving you excellent transferable skills that are in strong demand.

You can complete the course in three years to be awarded a BEng degree or, subject to progression criteria, complete an integrated Masters programme with the award of an MEng degree after four years. A sandwich year is also available.

### Year 1 (Credit Level 4)

The course shares this year with the Software Engineering MEng/BEng and the Computer Science BSc courses. On completing the year you may change to either of these two courses.

Subjects of study include: Computer Organisation • Information Modelling • Mathematics for Computing • Programming Methodology • Software Engineering Principles • Web Technology

### Year 2 (Credit Level 5)

Subjects of study include: C# .NET Enterprise Development • Database Systems • Human Computer Interaction • Introduction to Mobile Computing • Mobile Application Development • Network Application Development • Object-Oriented Design • Professional Practice • Project Management • Web Programming

### Sandwich placement year

The course offers you the opportunity to take a 12-month placement between Year 2 and Year 3 (Credit Levels 5 and 6). This will give you the practical skills to accompany your theoretical knowledge, and bring you a competitive edge in the job market.

### Year 3 (Credit Level 6)

Subjects of study include: Advanced Web Technologies • Mobile and Wireless Systems Architecture • Native Application Development • Project • Real-Time and Embedded Systems • Semantic Web • Service-Oriented Architecture

Options, choose one from: Computer Security and Forensics • Database Management • Network Software Design

### Year 4 (Credit Level 7) MEng

Subjects of study include: Advanced .NET development • Mobile IP and Architecture • Mobile Web • MS Compact and Micro-frameworks • Native Mobile Development • Project • Service-Oriented Architectures • Web Engineering

### Length of course

MEng: four-year, full-time;  
five-year, full-time sandwich  
BEng: three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

### UCAS codes

MEng: GH4P  
BEng: GHKÓ; with  
Foundation: GH4Q

### Location

Central London (Cavendish)

### Teaching and assessment

The course is practice based, and includes project and group work. It combines lecture, tutorial and practical laboratory elements. Formal exams are supported by continuous assessment.

### Associated careers

You will typically be part of a team building mobile and stationary web-based systems and services for business, commercial and enterprise applications. The degree will give you the flexible skills for a number of career pathways within the IT area. Your role may be designer, programmer, systems analyst or project manager. For information about the Foundation year see p72.

### Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points
BTEC National Diploma/Certificate	MMM/DD
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also entry requirements on p206.



## Software Engineering MEng/BEng Honours

This course studies the best ways to design, build, maintain and evaluate software systems. It makes use of many of the technical aspects of computer science, especially programming, and aims to develop the professional attitudes, interpersonal and technical skills you will need in the software engineering industry.

The course provides a solid foundation in software engineering theory and practice to develop professional software systems. As a BEng course its emphasis is on fundamental principles, design, acquisition of practical skills and evaluation of technologies. Having completed three years to be awarded a BEng qualification, students can choose (subject to progression criteria) to complete an integrated Masters programme with the award of an MEng degree after four years. A sandwich year is also available.

### Course content

The course covers software development, various programming languages, technologies and applications including Java, C/C#, UNIX, UML, graphics, networks, concurrent systems, databases, artificial intelligence, web and mobile computing.

You will share a common first year with students on the Mobile and Web Computing MEng/BEng and Computer Science BSc courses, which means that you can transfer in Year 1 (Credit Level 4), and specialise in Year 3 (Credit Level 6).

### Year 1 (Credit Level 4)

Subjects of study include: Communication and Learning Skills

- Computer Systems Fundamentals
- Information and Data Modelling
- Mathematics for Computing
- Programming Methodology (Java)
- Software Development Principles
- Software Engineering Principles
- Web Technology

### Year 2 (Credit Level 5)

Subjects of study include: Algorithms and Data Structures

- Human Computer Interface Design
  - Object-Oriented Development
  - Professional Practice
  - Project Management
- plus two option modules from the following: Database Design and Practice 1 • Database Design and Practice 2 • Introduction to 3D Graphics • Introduction to Symbolic Reasoning • Mobile Application Development • Mobile Computing Principles • Network Software Development • System Software and Tools • Web Programming

### Sandwich placement year

The course offers you the opportunity to take a 12-month placement between Years 2 and 3 (Credit Levels 5 and 6). This experience will give you the practical skills to accompany your theoretical knowledge, and bring you a competitive edge in the job market.

### Length of course

MEng: four-year, full-time;  
five-year, full-time sandwich  
BEng: three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

### UCAS codes

MEng: G603  
BEng: G600; with  
Foundation: G601

### Location

Central London (Cavendish)

### Teaching and assessment

The course is practice based, and includes substantial amounts of project and group work. It combines lecture, tutorial and practical laboratory elements. Formal exams are supported by continuous assessment.

### Associated careers

You will possess knowledge of a range of technical subjects, and the ability to synthesise this knowledge to produce practical solutions to engineering requirements in a large number of application areas. You will typically be part of a team building software applications for business and industry. Typical career opportunities include: software engineer, web application programmer, software designer/analyst, website designer/programmer, or senior team leader. The degree will also give you adequate knowledge and study skills to continue with further study and/or research.

**Year 3 (Credit Level 6)**

Subjects of study include: Computer Science Project • Computer Systems Security • Formal Specification • Requirements Engineering • Software Quality, Performance and Testing • plus two option modules from the following: Advanced Web Technology • Artificial Intelligence Applications 1 • Artificial Intelligence Applications 2 • Computer Forensics Investigation • Computer Systems Administration • Concurrent Programming (Core for MEng) • Distributed Systems and Network Software • Functional Programming • Native Programming • Programming Language Translation • Real-Time and Embedded Systems • Service-Oriented Architecture

**Year 4 (Credit Level 7) MEng**

Selected modules from the postgraduate programmes, for example: Advanced Algorithms and Complexity • Computer Vision and Image Processing • Database Administration • Data Warehousing and Data Mining • E-Application Development • Forensics Data Recovery and Analysis • Network Security • Research Methods • Semantic Web • Software Architecture • Software Project Management • Software Research Project • Web Services

For information about the Foundation year see p72.

**Typical offer for September 2011**

<i>Qualification type</i>	<i>Grade/points</i>
A Levels	CCC/AA
International Baccalaureate	28 points
BTEC National Diploma/ Certificate	MMM/DD
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also standard entry requirements on p206.

If your results are just below the entry qualifications for our degrees, or you have an equivalent non-standard background, then this course is designed to improve your knowledge and skills to progress to any of the degree courses offered by the School. The course represents the Foundation Year (Credit Level 3) of the modular scheme, and is an integral part of an extended range of BSc Honours degree courses in computer science. It provides an informal and adult environment in which you can acquire the confidence and skills to study effectively at degree level.

#### Course content

The course will provide you with an introduction to all major areas of computing together with the necessary mathematical background. Emphasis is placed on the development of your analytical and practical skills necessary to start one of our degree courses. Hands-on experience will enable you to become competent in the use of computers in a range of business and industrial applications.

Subjects of study include: Computer Programming • Computer Science • Games Design Project • Mathematics • Professional and Transferable Skills • Spreadsheets and Databases • Webpage Design

#### Length of course

One-year full-time, as the first year (Credit Level 3) of a full-time four- or five-year (sandwich) degree programme

#### UCAS codes

See individual course entries

#### Location

Central London (Cavendish)

#### Teaching and assessment

You will study eight modules. Most modules include lectures provided each week. Tutorial seminar classes are also offered each week to provide a stimulating environment for you to work through examples and case studies, experiment with hands-on solutions in the labs, engage in group discussions, and gain immediate feedback and support from tutors. Course work is often based around written reports, laboratory practical tests, in-class theory tests, participation in group discussions, and individual and group project work. Some modules may include end of module exams.

#### Associated careers

Completion of this Foundation year course will allow you to progress on to one of the named computing degrees.

#### Typical offer for September 2011

Qualification type	Grade/points
A Levels	DDD/BC
International Baccalaureate	26 points
BTEC National Diploma/ Certificate	MMP/DM
Advanced Diploma	Grade D in a relevant subject eg IT or Engineering, and a relevant ASL at Grade D

See also entry requirements on p206.

Working in the advancing world of information systems can be exciting and rewarding, as businesses become more and more reliant on information systems to support innovation, decision making and day-to-day operations. The creative use of information systems can transform organisations, and successful enterprises require hybrid managers who can evaluate the tools, gauge the risks and provide the key insights and sound direction for strategic business planning.

This course develops your understanding of the business challenges of an enterprise, and your ability to conceive and manage solutions which are increasingly ICT-dependent. You will integrate your skills of problem solving and information systems modelling with your knowledge of business processes and environments. You will be able to consult on, support or develop the technological platforms of an enterprise to achieve competitive advantage.

### Course content

This course will prepare you for work in an increasingly challenging and rewarding field by giving you a clear perspective of the current nature and practice of business and information systems. It is being taught in conjunction with the Westminster Business School which is providing specialist business modules that account for up to a quarter of the degree. In Year 1 (Credit Level 4) you will be introduced to the main fundamental concepts and in Year 2 and Year 3 (Credit Level 5 and 6) you will follow the specialist themes which interest you the most.

### Year 1 (Credit Level 4)

Year 1 modules provide underpinning in the subject area. You will be introduced to the various elements of information systems, business and technology. These modules are the foundations upon which you will build your insight in the areas of the business environment, information systems and available technologies. You will also develop skills required for the remainder of your studies and your future professional life, such as information modelling, programming, academic writing and communication.

### Year 2 (Credit Level 5)

Year 2 is the development stage of the course. The focus of the modules will be mainly on the design and development of information systems and databases, project management, and understanding available solutions. The Professional Practice module covers professional and ethical issues as well as career management. You also have the flexibility to take an option module in a relevant area of your choice.

### Sandwich placement year

You will have the opportunity to take a year-long placement between Year 2 and Year 3 (Credit Levels 5 and 6). This will give you practical skills to accompany your theoretical knowledge, and bring you a competitive edge in the job market. Our students have been placed on live projects in city banks and insurance companies, software consultancy firms, healthcare providers and retail companies.

### Year 3 (Credit Level 6)

Year 3 modules will help you develop your critical thinking and evaluation skills. Strategic management of information systems, systems quality, and computer systems security. You also have the opportunity to take two option modules, furthering your specific interests. There will be a double project module in which you will use your knowledge and skills, conduct independent research and investigation, and develop a solution for a defined problem.

### Length of course

Three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

### UCAS codes

G505; with Foundation G506

### Location

Central London (Cavendish)

### Teaching and assessment

Lectures, tutorials and computer workshops are supported by a variety of teaching methods, computer-enhanced learning tools, and industry-standard applications software. We place an emphasis on active student involvement and problem solving. Assessments are either based on a combination of course work and an end-of-module exam, or assessed through course work only.

### Associated careers

Graduates of the course typically go on to careers in the business and/or IT sectors. Career options range from systems developers to business managers. Graduates may continue their study on one of our comprehensive range of MSc courses or undertake an MPhil/PhD research programme. For information about the Foundation year see p72.

### Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points (minimum)
BTEC National Diploma/Certificate	MMM/DD
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also standard entry requirements on p206.

### Other related areas/courses you might be interested in:

- Business Management BA Honours (p52)
- Enterprise Management BSc Honours (p56)

Information technology is transforming the lives of individuals and businesses across the world. There is a continual flow of new products and innovative solutions, providing a stimulating area of study and interesting job opportunities. The course aims to develop you as a professional, so that you can recognise the potential of ICT (information and communications technology), support users and decision makers, and specify and configure a wide range of effective solutions in a commercial environment. You will cover a range of technologies including networks, servers, databases, multimedia, web, and e-commerce. As a graduate you will combine your skills of systems specification and problem solving with your knowledge of technology and solutions, enabling you to specify, support, configure and advise on the technological issues of an enterprise.

#### Course content

This course will prepare you for work in an increasingly challenging and rewarding field by giving you the skills and knowledge to support and configure existing systems and specify new solutions. In Year 1 you will be introduced to the main fundamental concepts, and in Year 2 and Year 3 you will be invited to follow the specialist themes which interest you the most.

#### Year 1 (Credit Level 4)

The Year 1 modules provide underpinning in the subject area. You will be introduced to the various elements of information systems and the technology on which they operate. You will develop the skills required for the remainder of your studies and your future professional life, such as information modelling, programming, academic writing and communication.

#### Year 2 (Credit Level 5)

Year 2 is the development stage. The focus of the modules will be mainly on the applications and specification of technologies for information systems, network systems, the web and the internet. The Professional Practice module covers professional and ethical issues as well as career management. You also have the flexibility to take an option module in a relevant area of your choice.

#### Sandwich placement year

The course offers you the opportunity to take a year-long placement between Year 2 and Year 3 (Credit Levels 5 and 6). This will give you the practical skills to accompany your theoretical knowledge, and bring you a competitive edge in the job market.

#### Year 3 (Credit Level 6)

Year 3 modules will help you to develop your critical thinking and evaluation skills. You will also have the opportunity to take option modules, furthering your specific interests. There will be a double project module in which you will use your knowledge and skills, conduct independent research and investigate and develop a solution for a defined problem.

\* subject to approval

#### Length of course

Three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

#### UCAS codes

G507; with Foundation G509

#### Location

Central London (Cavendish)

#### Teaching and assessment

Lectures, tutorials and computer workshops are supported by a variety of teaching methods, computer-enhanced learning tools, and industry-standard applications software. We place an emphasis on active student involvement and problem solving. Assessments are either based on a combination of course work and an end-of-module exam, or assessed through course work only.

#### Associated careers

As a graduate of the course you are likely to go on to a career in the business and/or IT sectors, where you will be involved in user support, improvement and maintenance of existing systems, and work with other professionals on the specification of new systems. You could alternatively continue your studies on one of our comprehensive range of MSc courses or undertake an MPhil/PhD research programme. For information about the Foundation year see p72.

#### Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points
BTEC National Diploma/ Certificate	MMM/ DD
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also standard entry requirements on p206.

The course covers all aspects of the computer games development process, from programming to design and production, with emphasis on the technical and creative skills required to compete in the games and entertainment industry. Programming, maths and physics, games level design, 3D modelling, algorithms for real-time graphics, games production and simulation techniques are all highly suited to computer games, and this course gives you the necessary expertise for the development of such systems.

The needs of the industry are at the heart of this course, with a number of talks from well-established game companies as well as visits to computer shows and fairs. Over the last two years our students have successfully participated in international game competitions and have been panel members in game conferences.

The course is part of the Westminster Skillset Media Academy Network (see p149).

## Course content

This course will prepare you for work in an increasingly challenging and rewarding field by giving you a clear perspective of the current nature and practice of games development. In Year 1 (Credit Level 4) you will be introduced to the main fundamental concepts and in Year 2 and Year 3 (Credit Level 5 and 6) you will follow the specialist themes which interest you the most.

### Year 1 (Credit Level 4)

Year 1 modules provide an underpinning of the subject area. You are introduced to computer programming concepts, the hardware and software components of computer games, and the maths which are the foundations on which computer games are developed. These subjects are studied alongside the introduction to games development and creative games design and playability. The principal language of the first year is C++.

### Year 2 (Credit Level 5)

In Year 2 you continue to develop your programming skills by implementing prototypes of 2D games engines using C++. You are also introduced to 3D graphics programming, real-time graphics and game platforms. The maths becomes more advanced and games physics required in the games programming are introduced. Other subjects covered include professional practice, a mini games proposal and prototype (which can be used as part of your games portfolio if you decide to undertake the placement year), computer games and AI (Artificial Intelligence), and introduction to 3D modelling. There are also options in the second year that allow you to specialise, and which you can continue in your final year.

### Sandwich placement year

Between Year 2 and Year 3 (Credit Level 5 and 6) you can choose to take a year-long placement to gain real industry experience, which is invaluable for your final year of study and long-term career prospects.

### Year 3 (Credit Level 6)

In Year 3 you focus on advanced maths for games programming, advanced AI techniques, and networking design and programming. You have the chance to develop a large scale practical project which will be part of your games portfolio.

## Length of course

Three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

## UCAS codes

GG46; with Foundation GG4P

## Location

Central London (Cavendish)

## Teaching and assessment

The course combines lecture, tutorial and practical laboratory elements. Formal exams are supported by continuous assessment.

## Associated careers

You will have the ability to address the multidisciplinary needs of the games industries. Job titles include game programmers, game designers/level game designers, and testers. To get a job in the games industry you need to get a good Honours degree and demonstrate a passion for games. You also need to develop a portfolio (ie games/demos of what you can do). Participation in game competitions helps towards your CV and your real-life experience with a game project. For information about the Foundation year see p72.

## Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points (minimum)
BTEC National Diploma/Certificate	MMM/DD
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also standard entry requirements on p206.

## Other related areas/courses you might be interested in:

- Animation BA Honours (p44)
- Music (p150)

## Multimedia Computing BSc Honours

Multimedia plays a large role in our everyday lives, and using a kiosk in a museum or downloading music onto our mobile phone are the types of activity we all take for granted. This course offers you the opportunity to design, develop and produce multimedia content for a range of devices. It offers two pathways: Interactive Design allows you to focus on the design of multimedia products, while Multimedia Systems focuses on content development. Students in both pathways are exposed to all areas of the subject, but the pathways cater for the natural divide in the industry. Experts from the multimedia industry give regular talks and run presentations throughout the course.

### Year 1 (Credit Level 4)

You are given a broad introduction to computing as well as immediate exposure to the tools and software commonly used in the multimedia industry. The emphasis is on giving you a wide range of skills in interactive product design, content production, hardware and software components of computer systems, and programming, so that you can make informed choices about the direction you want to take in a subject that covers so many different areas.

### Year 2 (Credit Level 5)

In Year 2 you develop your skills in industry-standard multimedia tools, such as those by Adobe and Sony. You learn about the needs of industry and how multimedia projects are managed and organised, and you will also examine the principles of interactive product design, web development and scripting technologies. You can also focus more on interactive design issues or concentrate your skills on the programming within multimedia. You have the opportunity to choose between options in animation techniques, audio production, and multimedia development tools such as Flash, advanced multimedia programming with Java, 3D computer graphics and modelling and digital visual effects.

### Sandwich placement year

Between Year 2 and Year 3 (Credit Level 5 and 6) you can choose to take a year out and work in the multimedia industry. This offers you an ideal chance to put into practice the skills you have learnt. It also gives you the opportunity to develop a better understanding of the needs of the industry, and the experience gained from a placement often improves your career prospects following graduation.

### Year 3 (Credit Level 6)

You complete a project of your own choice. This is a real chance for you to develop your knowledge in an area you are interested in. You also have the opportunity to develop more advanced techniques in a variety of areas including design processes, digital video production, interface design for mobile devices, sound and music production, and virtual reality environments.

### Length of course

Three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

### UCAS codes

GP43; with Foundation G454

### Location

Central London (Cavendish)

### Teaching and assessment

The course combines lecture, tutorial and practical laboratory elements. Formal exams are supported by continuous assessment.

### Associated careers

Multimedia is an expanding industry and develops within a variety of departments rather than as an exclusive entity. Examples are education, marketing, e-commerce, web design, company training and music. You may find employment in multimedia production houses, corporate environments (marketing, communications, information technology, and training departments), in educational institutions, the media and film industry, and in entertainment. Employment possibilities include multimedia authoring specialist, website developer, interface designer, project/production manager, and multimedia database manager. You may also apply for a research degree in a related area. For information about the Foundation year see p72.

### Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points (minimum)
BTEC National Diploma/Certificate	MMM/DD
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also standard entry requirements on p206.

Computer graphics and animation play a key role in the multimedia and computer games industries, and there is a need for more professionals capable of designing and implementing computer-generated images in areas such as the entertainment industry, education, marketing and e-commerce. The course is driven by the needs of industry and offers both a focus on the theories and concepts in animation and multimedia, and the chance to develop hands-on skills using the main animated content tools and software. We have excellent contacts with the animation industry and often organise talks at the University as well as visits to shows and fairs in the London area. Areas such as project management, design and human interaction are also an integral part of the course.

### Year 1 (Credit Level 4)

You are given a broad introduction to multimedia and animation and immediate exposure to the tools and software commonly used within the industry. All areas of animation are considered, including programming, designing and developing content. Much of the work is course work based and you have opportunities to work with the key development tools. Both the development of graphics and the animation of assets are covered in the first part of the course.

### Year 2 (Credit Level 5)

In Year 2 you are exposed to the needs of the animation industry. There are opportunities to look at how projects are managed and organised. You will continue to improve your skills in the development, design and transition of animated content, and you are introduced to 3D computer graphics and modelling using software such as 3ds Max and Maya. You can also choose between options that put more focus on your programming or design skills, or look at animation and its crossover into other areas of computing.

### Sandwich placement year

You can choose to take a year out and work in the multimedia and animation industry. This offers you an ideal chance to put into practice the skills you have learnt in the first two years of the course. It also gives you the opportunity to develop a better understanding of the needs of the industry, and the experience gained from a placement often means that you are much better equipped to gain employment after your final year at the University.

### Year 3 (Credit Level 6)

You will complete a project of your own choice. This is a real chance for you to develop your knowledge in an area of interest, and to relate your work to the needs of industry. You also have the chance to develop more advanced techniques in a variety of areas such as motion capture and post-production. The focus continues to be hands-on with real exposure to the tools and software that create animated content and graphics. You will have a good understanding of the needs of the market, the job opportunities that are available and the types of specialisations on offer within the multimedia and animation industry.

### Length of course

Three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

### UCAS codes

GW4P; with Foundation GW46

### Location

Central London (Cavendish)

### Teaching and assessment

The course combines lecture, tutorial and practical laboratory elements. Formal exams are supported by continuous assessment.

### Associated careers

You may find employment in multimedia production houses, corporate environments (marketing, communications, information technology and training departments), in educational institutions, the media and film industry and in entertainment. Employment possibilities include multimedia authoring specialist, website developer, interface design, and project/production manager. You may also apply for a research degree in a related area. For information about the Foundation year see p72.

### Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points (minimum)
BTEC National Diploma/Certificate	MMM/DD
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C

See also standard entry requirements on p206.



Electronics has been taught at Westminster for more than 110 years, and electronic systems are used just about everywhere in modern society. A strong mathematical and theoretical teaching approach coupled with practical project work equips our graduates with the know-how to become system designers and researchers.

Depending on your area of interest, you will pursue one of several pathways. For the BEng course these are microelectronics or digital communications, while the pathways for the MEng course are embedded systems, microelectronic systems and wireless systems.

#### Course content

This course shares a common Year 1 (Credit Level 4) with the Computer Systems Engineering MEng/BEng degree. Project-based learning plays a large part in the courses, with project modules highly valued by employers. In Year 2 (Credit Level 5) these include a voice-over amplifier project, and the Micromouse maze-solving competition. In Year 3 (Credit Level 6) you take an individual project of your choice, as well as a group project tackling the design of a very large scale integrated (VLSI) programmable processor.

You can transfer to Computer Systems Engineering MEng/BEng at the end of the common first year. Subject to performance, it is also possible to transfer from the BEng to the MEng in Electronic Engineering at the end of Year 2 (Credit Level 5).

#### Year 1 (Credit Level 4)

Subjects of study include: Audio Processing Using an Embedded Microcomputer • Data Communications and Networks • Digital and Analog Circuits • Engineering Science and Maths • Linear System Analysis • Programming

#### Year 2 (Credit Level 5)

Subjects of study include: Analog Electronics Design\*  
• Communications • Digital Microelectronics\* • Event-Driven and GUI Programming • Micromouse Maze-Solving Competition\*  
• Professional Employability Skills • Signal and System Analysis

\* these subjects are taught as group projects

#### Sandwich placement year

A one-year placement in industry may be taken between Year 2 and Year 3 (Credit Levels 5 and 6). This gives you practical experience in the workplace and a competitive edge in the job market. It contributes to your professional development towards Chartered Engineer status.

#### Year 3 (Credit Level 6) – MEng

Subjects of study common to all pathways include: Advanced System Analysis and Design • Analog Microelectronics • Business Finance and Management • Individual Project • Robotic System Design  
• Wireless RF and Microwave Systems

Embedded Systems pathway: Real-Time Embedded Systems

Microelectronic Systems pathway: Embedded Processor Architecture

Wireless Systems pathway: Wireless Systems

#### Length of course

MEng: four-year, full-time;  
five-year, full-time sandwich  
BEng: three-year, full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

#### UCAS codes

MEng: H611  
BEng: H610;  
with Foundation: H608

#### Location

Central London (Cavendish)

#### Professional recognition

These courses are accredited by the Institution of Engineering and Technology (IET), enabling you, as a graduate, to become a Chartered Engineer after a period of professional experience. In the case of the BEng award, further study to MSc level is also required.

#### Teaching and assessment

You will receive advice and support from supervisors and other members of staff, all of whom are available to help you achieve your aims and get the most out of your education.

#### Associated careers

With an industry-wide skills shortage, specialists in these areas are enjoying a wide choice of job opportunities with high salaries. Employers are looking for creative people with the breadth of technical expertise to take a good idea from conception through to a viable product. Indeed, the range of skills provided gives an ideal grounding for many professions. Our graduates have gone on to work for the BBC and electronics giants such as British Aerospace, BT, GEC and Nokia, as well as for smaller private companies. Some have started up their own businesses in manufacturing or consultancy. For information about the Electronics Foundation see p81.

**Year 3 (Credit Level 6) – BEng**

Subjects of study common to both pathways include: Business Finance and Management • Digital Signal Processing Design • Individual Project • Robotic System Design

Microelectronics pathway: Algorithm Realisation • Analog Microelectronics plus one module from: • Communication Networks • Embedded Processor Architectures • Real-Time Embedded Systems • Wireless RF and Microwave Systems

Telecommunications pathway: Communication Networks • Wireless RF and Microwave Systems • plus one module from: • Algorithm Realisation • Analog Microelectronics • Embedded Processor Architecture • Real-Time Embedded Systems

**Year 4 (Credit Level 7) – MEng**

Subjects of study common to all pathways are: Industrial Group Project • Multirate DSP

Embedded Systems pathway: Embedded Media Processing • Video and Image Processing • plus one option module from the other MEng pathways

Microelectronic Systems pathway: DSP and Communication Processor Design • Mixed-Signal Integrated Circuit Design • plus one option module from the other MEng pathways

Wireless Systems pathway: Broadband Wireless Networks • Wireless System Design • plus one option module from the other MEng pathways

**Typical offer for September 2011**

<i>Qualification type</i>	<i>Grade/points</i>
A Levels	BBB to include Mathematics
International Baccalaureate	32 points to include Mathematics at Higher Level
BTEC National Diploma	DDM in Engineering
Advanced Diploma	Grade B in Engineering and relevant ASL at Grade B including Certificate in Mathematics for Engineering or A2 Maths

See also standard entry requirements on p206.

## Electronic Engineering BSc Honours

This course provides a solid grounding in the fundamentals of electronics and communications, including digital and analog processing, computing, embedded systems, project work, design and management. The team-building practical options at Year 2 (Credit Level 5) have been developed with assistance from the BBC as well as Ericsson, Nokia and Orange, ensuring they are immediately relevant in the modern job market, and have been widely applauded by employers.

The course covers a similar area to the Electronic Engineering BEng but emphasises the more practical and less analytical aspects of electronics design.

### Course content

Project-based learning plays a large part in the course, with project modules relevant to modern industry. At Year 2 (Credit Level 5) these include a voice-over amplifier project, and the Micromouse competition where teams of students vie to build the fastest maze-solving robot mouse. At Year 3 (Credit Level 6) you take an individual project of your choice, as well as a group project tackling the design of electronic systems.

### Year 1 (Credit Level 4)

Subjects of study include: Audio Processing Using an Embedded Microcomputer • Computer Networks and Communications • Digital and Analog Circuits • Engineering Problem Solving • Mathematics • Programming

### Year 2 (Credit Level 5)

Subjects of study include: Analog Electronics Design\* • Broadcast Engineering • Communication Systems • Digital Microelectronics\* • Event-Driven and GUI Programming • Micromouse Maze-Solving Competition\* • Professional Employability Skills • Signal Processing

\* these subjects are taught as group projects

### Sandwich placement year

A one-year placement in industry may be taken between Year 2 and Year 3 (Credit Levels 5 and 6). This gives you practical experience in the workplace and a competitive edge in the job market. It contributes to your professional development towards Incorporated Engineer status.

### Year 3 (Credit Level 6)

Subjects of study include: Business Finance and Management • Cellular Radio Networks • Digital Signal Processing • Individual Project • Mobile Radio Systems, plus two options from: Analog Microelectronics • Real-Time Embedded Systems • Sound Processing Systems • Video Broadcasting

### Length of course

Three-year full-time;  
four-year, full-time sandwich;  
four-year, full-time with Foundation

### UCAS codes

H601; with Foundation H607

### Location

Central London (Cavendish)

### Professional recognition

This course is accredited by the Institution of Engineering and Technology (IET). This entitles you, after a period of experience, to become an Incorporated Engineer.

### Teaching and assessment

You will receive advice and support from supervisors and other members of staff, to help you achieve your aims and get the most out of your education.

### Associated careers

The range of skills provided gives an ideal grounding for many professions. Our graduates have gone on to work for electronics giants such as British Aerospace, BT and GEC as well as smaller private companies. Some have started up their own businesses in manufacturing or consultancy. Opportunities exist for postgraduate study leading to Masters and PhD qualifications. For information about the Electronics Foundation see opposite.

### Typical offer for September 2011

Qualification type	Grade/points
A Levels	CCC/AA
International Baccalaureate	28 points
BTEC National Diploma/ Certificate	MMM/DD in Engineering
Advanced Diploma	Grade C in IT or Engineering and relevant ASL at Grade C including Certificate in Mathematics for Engineering or AS Maths

See also standard entry requirements on p206.

**This course is for those who wish to pursue a career in electronic systems, but lack the appropriate entry qualifications; it provides a thorough grounding for subsequent BEng and BSc study. Good performance on the Foundation guarantees you a place on one of the Electronics degree courses.**

### Course content

You will acquire the theoretical background of electronics systems study, and receive an introduction to the practical skills covered in the degree courses. The course is designed to support the development of students with a wide variety of backgrounds and previous experience. It covers the maths and science required to give you a head-start in the first year of your chosen degree course. In addition, you are introduced to analog and digital electronics as well as the project-based learning methods encountered later in your course. There is a choice of option modules comprising either extra background English or Maths.

### Credit Level 3

Subjects of study include: Algebra and Trigonometry • Analog and Digital Electronic Circuits • Communications • Complex Numbers and Calculus • Computer Engineering • Computer Programming • Games Design Project

### Length of course

One-year, full-time as the first year (Credit Level 3) of a four-year, full-time Honours degree; part-time also available

### UCAS codes

See individual course entries

### Location

Central London (Cavendish)

### Teaching and assessment

You will receive advice and support from supervisors and other members of staff, all of whom are available to help you achieve your aims and get the most out of your education.

### Associated careers

Completion of this Foundation year will allow you to progress on to one of the named electronic network or computer engineering degrees in the School.

### Typical offer for September 2011

<i>Qualification type</i>	<i>Grade/points</i>
A Levels	DDD/BC
International Baccalaureate	26 points
BTEC National Diploma/ Certificate	MMP/DM in IT or Engineering
Advanced Diploma	Grade D in a relevant subject eg IT or Engineering, and a relevant ASL at Grade D

See also standard entry requirements on p206.