

# Forensic Science

<b>Final award</b>	BSc (Hons) Forensic Science
<b>Intermediate awards available</b>	BSc (Hons) Bioscience
	Dip HE, Bioscience
	Cert HE, Bioscience
<b>Mode of delivery</b>	UEL on campus
<b>UCAS code</b>	F410
<b>Details of professional body accreditation</b>	N/A
<b>Relevant QAA Benchmark statements</b>	Biosciences
<b>UEL Academic School</b>	Health, Sport and Bioscience
<b>Date specification last up-dated</b>	May 2014

## The summary - UCAS programme profile-

### BANNER BOX:

Forensic science is the application of science to law enforcement. This programme offers excellent employment prospects with graduates finding employment in both the forensic sector and others where analytical and problem solving skills are valued.

### ENTRY REQUIREMENTS

Applicants will be required to have AS/A2 qualifications, the minimum requirement being 240 points at A2 level with a preferred minimum of 100 A2 points in Biology or Chemistry.

We had also accepted Access to Science, Advanced GNVQ in Science at merit grade, and BTEC National Diploma in Science with a minimum of 6 modules at merit grade or higher. All students should also have had a minimum of grade C at GCSE, or equivalent, in English language, mathematics and double science.

Applicants with overseas or alternative qualifications were considered on an individual basis. For mature students, credit may have been given for relevant work experience.

Direct entry to the second year of the programme is no longer available.

In the case of applicants whose first language is not English, then IELTS 6.0 (or equivalent) was required. International qualification were checked for appropriate matriculation to UK Higher Education undergraduate programmes.

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## **ABOUT THE PROGRAMME**

### **What is Forensic Science**

Forensic Science is the application of science to criminal and civil law enforcement, so the forensic scientist uses a range of scientific techniques to provide admissible evidence in a court of law.

### **Forensic Science at UEL**

The programme at UEL aims to provide students with a broad background to a large number of scientific techniques used by forensic scientists and also an introduction to aspects of law relevant to businesses in the UK.

Forensic Science at UEL offers extensive laboratory training through all years of the programme, trains students in attention to detail and professional quality standards as required by employers in associated sectors.

This course attracts students who are passionate about contributing to crime reduction in society and communities.

The programme also shares a common first year with other Bioscience degrees at UEL, leaving you an option to transfer at the end of the first year.

### **Programme structure**

Students follow a 3-year full-time degree pathway. The programme is also available part time and the expected duration is 4 years.

Level 4 of the programme is designed to cement and extend areas of study which should already be at least partly familiar to students. In two Skills modules students will develop the study skills, numeracy and IT skills required in any modern degree programme together with the more specialist background knowledge in areas such as essential chemistry, cell biology and statistics, which are required by a Forensic Scientist. A module on legal methods and skills provides an introduction to the relevant aspects of law.

Level 5 modules include: Biological Evidence, Biology of Disease which studies the major methods of laboratory investigation, and Molecular Genetics, in which techniques in DNA profiling are introduced. There is an option to study either Physiological Regulation & Functional Anatomy or Cellular Biochemistry

Level 6 includes the taught modules: Forensic Analysis, Forensic Pathology and Toxicology.

In Level 6, you also conduct an individual research project involving original work with academic staff who publish in international scientific journals. UEL has high impact forensic research topics, such as anti-terrorism, forensic computing and drug abuse. Lab-based

projects span fingerprinting science, ink analysis, DNA profiling, infectious disease diagnostics and environmental toxicology. The programme at UEL aims to provide students with a broad background to a large number of scientific techniques used by forensic scientists and also an introduction to aspects of law relevant to businesses in the UK.

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### **Learning environment**

Lecturers include professional scientists, practising lawyers, police detectives and other court-going consultants. The School has a fully equipped Forensic Research Laboratory, which has an international reputation for analysis of complex mixtures. You will work alongside MSc and PhD students on projects of use to forensic practitioners and businesses that value attention to detail.

Learning is encouraged through participation in a wide variety of activities including lectures, seminars, workshops, laboratory-based practical's, external visits, distance learning, web-based learning etc. Each module has 5 to 6 hours contact per week, and may need up to 10 hours further individual study per week on each module.

Success at university depends on developing your ability to study independently using library resources, Computer-assisted learning (CAL), hand-outs and web-based study activities. The first year has a Skills module in each semester. These help you make the major shift to independent learning needed at university, compared to schools and FE colleges, and also help to develop those transferable skills so important in working life.

### **Assessment**

Students are assessed in practical work and theory. In most modules 50% of the module mark is derived from coursework during term time (this can take a variety of forms including laboratory work, data analysis, essays, oral presentations etc.) and 50% from written theory examination often at the end of the academic year. Some modules also include laboratory practical exams.

You are assessed on your laboratory skills and quality of documentation.

### **Work experience/placement opportunities**

Students can compete for summer researchinternships whilst at UEL.

### **Project work**

Project work is an essential component of an Honours degree programme and one that most students enjoy. Small projects and group work exercises feature throughout the programme.

One quarter of your final year is spent on an individual research project. Project work encourages students to show initiative in their individual work under supervision, using appropriate analytical techniques to generate and interpret new data.

Laboratory based projects are encouraged but library based research projects may also be undertaken.

### **Added value**

- Extensive personal support throughout the programme.
- Access to an impressive Global Forensic Alumni network.
- Sound practical as well as academic training.
- Effective careers advice and support available.

### **Your future career**

The programme will enable you to pursue careers in forensic science and related occupations, such as scientific support for the police, consumer protection/trading standards, financial services, health and safety agencies, public health, diagnostics, environmental monitoring and control, accident investigation and quality assurance in the manufacturing industries including food and pharmaceutical. It can also be utilised by those students who have less specific career aspirations but who wish to study a rigorous scientific programme. One rapidly growing field of work is in auditing and in the insurance industry providing the technical support in claims assessment.

### **How we support you**

The School of Health, Sport and Bioscience provides immediate contact with University support systems.

- In Level 4, you are allocated a Personal Tutor (a member of staff familiar with your degree). You will see your Tutor at regular intervals to discuss progress and life in general.
- Module leaders and Programme leaders also give support on academic matters, and advice about other specialist help available through the University.
- A student Help Desk to provide administrative assistance and advise how to get the right help.
- Internet homepages are used by many staff to support their teaching and your learning.
- Support for students on a University level includes:
  - Libraries and Learning Resource Centres
  - Childcare for students with children aged 21/2 years to 5 years.
  - Careers advice and information
  - Counselling and Advice for practical problems
  - Health Centre with a nurse regularly on duty.
  - Language tuition
  - Dyslexia support
  - Accommodation

### **Bonus factors**

- A small and friendly campus.
- A School with staff and facilities to match to the wide interests and backgrounds of students.

- Good connections with employers.
- A 5 minute walk from Westfield Stratford City shopping complex
- Multiplex cinema, theatre, supermarkets, high street shops, restaurants, cafes and pubs a few minutes walk away in Stratford - a major site of new development in East London.
- Central London only 20 minutes away by underground and [extensive transport links with all parts of London](#).

## **IS THIS THE PROGRAMME FOR ME?**

### **If you are interested in .....**

- Making a contribution to crime reduction in society and communities in the UK and overseas.
- Developing your knowledge of Law and Biology as applied to Forensic Science.
- Studying practical methods relevant to Forensic Science.
- Understanding how current procedures in Forensic Science depend on study at many levels: humans, cells, other organisms and Law.
- Improving your scientific skills of logical argument and analysis.

### **If you enjoy....**

- Following current high profile forensic investigations in quality papers such as the Times and The Guardian.
- Reading or hearing about research and/ or medicine.
- The challenge of increasing not just your knowledge of facts, but also your understanding of how science may contribute to solving crimes and the criminal justice system.
- Conducting scientific procedures and experiments in laboratories and IT labs with precision.
- Working in groups in laboratories using standard and new techniques to solve problems.
- Being able to study quietly and individually away from formal staff-led sessions.

### **If you want....**

- To study how the body 'works' in health and disease.
- Learn how medical techniques are used to assess the human body in health and disease (e.g. ECG).
- To have a recognised first aid certificate.
- To do 'hands on' anatomy.
- The chance of combining your degree programmes with other programmes involving Sport, Health, Pharmacology and Clinical Science.
- The option of a year's work experience in a laboratory away from the University.
- To be able to spend part of your final year on your own individual research project at the university.

## **Programme aims and learning outcomes**

### **What is this programme designed to achieve?**

This programme is designed to give you the opportunity to:

- acquire a sound understanding of the theory and practice of the sciences underlying forensic practice.
- critically evaluate the concepts, techniques and applications of forensic science
- develop the practical and transferable skills necessary for a career in forensic science, auditing and related areas.
- develop responsibility for independent learning.

### **What will you learn?**

#### **Knowledge**

- A broad overview of the bioscience field at level four. Thereafter you will acquire more detailed specialist knowledge in forensic science.
- The programme aims to provide a background to a large number of the scientific techniques used in forensic investigations.
- Students will acquire an understanding of the laboratory procedures and techniques used, which will allow the rapid acquisition of more specialist skills later in their career.
- An awareness of the wider implications of scientific research on society as a whole.
- Excellent academic performance enables our students to compete for places on the most highly competitive postgraduate programmes in the UK.

#### **Thinking skills**

- The ability to comprehend, analyse and criticise published information in biology and chemistry.
- The ability to formulate hypotheses with the minimum of assistance.
- The ability to use integrated approaches to problem solving.

#### **Subject-Based Practical skills**

- The ability to carry out literature searches effectively to find information on a specific topic.
- The ability to select and utilise appropriate computer software and databases.
- The ability to select and apply a range of practical skills relevant to your chosen areas of forensic science.
- The ability to design and carry out experimental work.
- The ability to analyse data from your own and other people's experiments and to interpret them in the light of published work.
- The ability to effectively communicate your work in court to scientists and the general public.

#### **Skills for life and work (general skills)**

- Awareness of the range of employability opportunities that a degree in Forensic Science provides access to.
- The development of your own style of independent learning.

- The ability to communicate ideas and experiments to others and to debate relevant scientific and /or ethical issues.
- IT skills and attention to detail under quality standards.
- Communication skills.
- Team work.
- Time management.

## **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:

3        equivalent in standard to GCE 'A' level and is intended to prepare students for year one of an undergraduate degree programme

4        equivalent in standard to the first year of a full-time undergraduate degree programme

5        equivalent in standard to the second year of a full-time undergraduate degree programme

6        equivalent in standard to the third year of a full-time undergraduate degree programme

7        equivalent in standard to a Masters degree

### **Credit rating**

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

### **Typical duration**

The expected duration of this programme is 3 years full-time. or 4 years part-time.

### **How the teaching year is divided**

The teaching year begins in September and ends in June

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

### **What you will study when**

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

LEVEL	UEL Module Code	TITLE	DISTANCE LEARNINGMODULES (insert Y where appropriate)	CREDITS	STATUS SINGLE
4	BS4001	Biochemistry	N	30	Core
4	BS4002	Cell Biology	N	30	Core
4	BS4003	Essential Chemistry	N	30	Core
4	BS4004	Human Anatomy & Physiology	N	30	Core
5	BS5001	Biology of Disease	N	30	Core
5	BS5002	Cellular Biochemistry	N	30	Option
5	BS5006	Molecular Genetics	N	30	Core
5	BS5008	Physiological Regulation & Functional Anatomy	N	30	Option
5	BS5014	Biological Evidence	N	30	Core
6	BS6009	Research Project	N	30	Core
6	BS6012	Toxicology	N	30	Core
6	BS6023	Forensic Analysis	N	30	Core
6	BS6024	Forensic Pathology	N	30	Core

*\*Please note that a core module is a module that must be completed in order to gain the final award.*

### 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 four or higher
- A minimum of 120 credits at level five or higher
- A minimum of 120 credits at level six or higher

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

- A minimum of 120 credits at level four or higher
- A minimum of 120 credits at level five or higher
- A minimum of 60 credits at level six or higher



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

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

## **Teaching, learning and assessment**

### **Teaching and learning**

#### **Knowledge is developed through**

- Lectures
- Tutorials
- Workshops
- Practicals including crime scene simulation exercises and documentation
- Reading
- Internet, Moodle and CAL

#### **Thinking skills are developed through**

- Computer aided learning
- Presentations
- Preparing for tutorials and seminars/workshops
- Completing coursework assignments (including data analysis essays, presentations etc)
- Independent reading

#### **Practical skills are developed through**

- Laboratory Practical and/or fieldwork
- Computer simulations and use of IT

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

- Managing time
- Presenting ideas and arguments in a structured manner - written and oral communication
- Problem solving
- Team work

### **Assessment**

#### **A wide variety of assessment methods are used including**

- Written examinations
- Practical reports
- Essays
- Data analysis

- Poster presentations
- Oral presentations
- Portfolios
- Final year research project and dissertation
- MCQ tests
- Database searches
- Library exercises

### **Knowledge and Thinking Skills are assessed by**

- Evidence of reading and comprehension of the topics covered in the module being assessed. This will be particularly apparent in essay work and examinations.
- Ability to describe, explain and discuss various aspects of the programme material in the context of class tutorials, group work, presentations and other pieces of assessed coursework for the module.
- In the final year particularly, thinking skills will be assessed by the ability to take information presented in any module out of its original context and to utilise this information in the construction of arguments, comparisons, hypotheses etc as required to address the specific assessments in each module.

### **Practical skills are assessed by**

- The ability to carry out laboratory practical work effectively, within the timeframe allocated.
- The ability to interpret and report on work carried out in the laboratory.
- The ability to complete assignments using appropriate resources.
- Evidence of logical planning and management of time in the preparation of materials for assessment.

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

- The ability to work to strict deadlines
- The ability to select and utilise appropriate problem solving skills
- Demonstration of effective oral and written communication skills
- Evidence of interpersonal skills such as teamwork and /or team leadership
- Evidence of general numeracy skills

## **How we assure the quality of this programme**

### **Before this programme started**

Before this programme started, the following was checked:

- there would be enough qualified staff to teach the programme;
- adequate resources would be in place;
- the overall aims and objectives were appropriate;
- the content of the programme met national benchmark requirements;
- the programme met any professional/statutory body requirements;

- the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms.

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

### **How we monitor the quality of this programme**

The quality of this programme is monitored each year through evaluating:

- external examiner reports (considering quality and standards);
- statistical information (considering issues such as the pass rate);
- student feedback.

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

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

### **The role of the programme committee**

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

### **The role of external examiners**

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

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

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

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

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

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

### **Listening to the views of students**

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

- Module evaluations
- Student representation on programme committees (meeting each semester)
- Personal tutor, module leader, programme leader, field co-ordinator

Students are notified of the action taken through:

- Circulating the minutes of the field committee and the annual quality improvement report
- Verbal feedback to specific groups
- Providing details on the appropriate notice board

### **Listening to the views of others**

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

- Feedback from former students
- Industrial liaison committee
- Liaison with sandwich placement employers

### **Where you can find further information**

Further information about this programme is available from:

- The UEL web site (<http://www.uel.ac.uk>)
- Health, Sport and Bioscience Website <http://www.uel.ac.uk/hsb/>
- The programme handbook
- Module study guides
- Regulations for the Academic Framework <http://www.uel.ac.uk/academicframework/>
- UEL Guide to Undergraduate Programmes
- School web pages <http://www.uel.ac.uk/hsb/>
- UEL Manual of General Regulations (<http://www.uel.ac.uk/qa/policies/manual/>)
- UEL Quality Manual (<http://www.uel.ac.uk/qa/policies/qualitymanual/>)