

# Clinical Sciences (Combined Honours) This programme is no longer recruiting

<b>Final award</b>	BSc (Hons)
<b>Intermediate awards available</b>	Cert HE, Dip HE, BSc
<b>UCAS code</b>	
<b>Details of professional body accreditation</b>	
<b>Relevant QAA Benchmark statements</b>	Biosciences/ Biomedical Sciences
<b>Date specification last up-dated</b>	December 2013

## Profile

### The summary - UCAS programme profile

#### BANNER BOX:

This combined honours programme provides a wide choice of options for students with an interest in clinical sciences. For students wishing to work as Biomedical Scientists in the NHS. It should be noted that the combined honours programme only partially fulfils the requirements for IBMS accreditation and further study would be necessary to obtain accreditation.

#### ENTRY REQUIREMENTS

For students entering with AS/A2 qualifications, the minimum requirement is 240 points at A2 level with a preferred minimum of 100 A2 points in Biology and Chemistry. We also accept 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 a minimum of grade C at GCSE, or equivalent, in English language, mathematics and double science.

Applicants with overseas or alternative qualifications are considered on an individual basis. For mature students, credit may be given for relevant work experience. Direct entry to the second year of the programme is available for students with Higher National Certificate or Diploma in an appropriate area, or for those who have successfully completed study equivalent to level one at another University.

If you want to study Biomedical Sciences but have not achieved the right entry qualifications, why not start with our extended degree programme.

Students may be admitted through Accreditation of Experiential Learning (AEL) or Accreditation of Certificated Learning (ACL) processes.

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

#### ABOUT THE PROGRAMME

## **What is Clinical Science?**

Clinical Scientists carry out many of the complex and diverse investigations required in modern hospital pathology laboratories. They provide the scientific information required for effective diagnosis and treatment. To do this they require an in depth knowledge of the causes of disease and the practical ways in which they can be investigated. They may also be involved in clinical research, investigating causes of disease or potential new treatments. This combined honours programme aims to provide this knowledge together with a range of specialist options to suit your particular clinical interests. If you want to study Clinical Sciences but have not yet got the right entry qualifications, why not start with our Extended Degree programmes at UEL which can feed into the Clinical Sciences programme at Level 1.

## **Clinical Sciences at UEL**

- The programme at UEL is based around the study of the biology of disease.
- All specialist areas of Clinical Sciences are available as options in the programme, which enables selection to be broadly based or relatively specialist.
- Students can obtain paid clinical training in accredited hospital laboratories by taking an optional sandwich year.
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- Offers extensive laboratory training through all years of the programme

## **Programme structure**

- Students follow a 4-year sandwich degree or a 3-year full-time programme. The programme can also be followed part-time.
- At Level 1, basic concepts are introduced in modules on Cellular Biology, Cellular Processes, Human Physiology and Microbiology. Skills for Biosciences and Human Health and Disease modules provide general background skills, statistics, chemistry, IT and laboratory skills. These modules also include a programme introducing the biology of disease processes.
- At Level 2, students continue to build on the options elected at level 1, choices include further study of biochemistry with modules of Metabolism and Molecular Biology. Modern molecular biology methods and their medical applications are introduced in Molecular Genetics, and Practical and Employability Skills investigates the major methods of laboratory investigation. The study of human physiology is continued in Physiological Function and Dysfunction, which also includes an introduction to the histology of normal and pathological tissues. The biology of disease causing micro-organisms is studied in Medical Microbiology.
- The third year of study can be spent away from the University in an agreed work placement. (see below).
- The final year (Level 3) contains modules of Medical Biochemistry, looking at the biochemical causes of disease, Infectious Disease Processes, which continues the study of medical microbiology and Immunology, which investigates the body's defence systems. In Cellular Pathology, Haematology and Serology the investigation of pathological tissue and of the blood is studied. In the final taught module the student can choose to continue the study of Medical Microbiology by taking Infectious Disease Control or of Immunology by taking Applied Immunology.

- In the final Level 3 module you do an individual research project involving original self directed work. This may be laboratory based, or it may involve a library investigation.

### **Learning environment**

Learning is encouraged through participation in a wide variety of activities including lectures, seminars, workshops, laboratory-based practicals, external visits, distance learning, web-based learning etc. You study 3 modules per semester. Each module has 5 to 6 hours contact per week, and may need up to 10 hours further individual study per week. Success at university depends on developing your ability to study independently using library resources, CAL, handouts and web-based study activities. The first year has a Skills module 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 the semester (this can take a variety of forms including laboratory work, data analysis, essays, oral presentations etc.) and 50% from unseen written theory examination at the end of the semester.

- Level 1 (Year 1) modules introduce you to the standards and types of assessment used at university. Some have theory exams staged at intervals through the semester. Although they do not contribute to your final Honours grade, you are expected to achieve at least 40% in all Level 1 modules.
- Your final Honours grade uses marks from Level 2 and Level 3 modules only. Your Level 1 modules prepare you to do your best in these later years.
- If a module is not passed at the first opportunity, marks from later opportunities are not capped.

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

- The third year of the programme can be spent in a Sandwich Placement. This is optional but it is strongly recommended for students on this programme, for whom it will provide significant advantages in obtaining State Registration.
- Placements are arranged in accredited hospital pathology laboratories and students can complete a proportion of the practical requirement for State Registration during their placement year. It is unlikely that all the State Registration requirements will be completed within the year, but students are encouraged to return to the placement laboratory at the end of their programme to complete the clinical requirements. In this way students can currently become State Registered within 3 - 6 months of graduation. Placements in the East London area are paid by the local NHS Workforce Development Corporation, who also pay a bursary to former placement students in their final year at university. Placements in other areas of the country have similar funding arrangements.

Currently student placements in the North East London NHS area include: Barts and The London NHS Trust, Homerton Hospital, Whipps Cross Hospital, Newham General Hospital

Barking and Havering NHS Trust. Similar opportunities are available in NHS trusts across the UK. Placements can be in any of the specialist areas of Biomedical Sciences (Clinical Biochemistry, Medical Microbiology, Haematology, Cellular Pathology or Immunology).

Visits to hospital laboratories will be arranged in the second year of the programme so that students know what is involved in each of the specialist areas, and both the university and its clinical partners will work to ensure that each student is accommodated in the specialism they choose.

### **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.
- Your final year includes an individual research project module in the final semester.
- Project work encourages students to show initiative in their individual work under supervision in a laboratory, using appropriate techniques to generate and interpret new data.
- Most projects continue investigating areas of clinical interest such as cancer therapy, vaccine development and the development of clinical tests.
- Projects may be library or laboratory based.

### **Added value**

- Extensive personal support throughout the programme.
- Sound practical as well as academic training.
- Excellent job prospects for all students at the end of the programme both in the NHS and elsewhere.
- Effective careers advice and support available.

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

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

- Extensive personal support throughout the programme
- Sound practical as well as academic training
- Excellent job prospects for all students at the end of the programme both in the NHS and elsewhere
- Effective careers advice and support available

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

- Reading or hearing about research and/ or medicine (do you already enjoy TV documentaries like Horizon or Equinox, radio science programmes, New Scientist articles?).
- The challenge of increasing not just your knowledge of facts, but also your understanding of how science contributes to the search for new solutions to problems.
- Doing scientific procedures and experiments in laboratories and IT labs with precision.

- Working in laboratories using standard and novel techniques to solve problems.
- Being able to study quietly and individually away from formal staff-led sessions.

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

- To focus eventually on one specific area of biomedical science, but still keep your career options open.
- The chance of reviewing your degree programme at the end of the first year and possibly changing to Biochemistry, Pharmacology, Toxicology, or a more general Biosciences degree.
- The option of a year's work experience in a laboratory away from the University.

### **Your future career**

Many students go on to research degrees and to jobs in research institutes, hospitals, industrial and pharmaceutical laboratories and in pharmaceutical sales. Because the degree is broad-based it is also an excellent qualification for a teaching career.

### **How we support you**

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

- In your first year, 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
- The School also has a 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.
- Lecture and practical files, quizzes, mark summaries and much more is now available for several modules via [UEL UELPlus Online Programme links](#).

Throughout the programme you will find a number of scheduled support activities devoted to specific aspects e.g. how to write your project report, or more general aspects such as careers.

Support for students on a University level includes:

- [Libraries and Learning Resource Centres](#)
- [Childcare for students with children aged 2 1/2 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 School of Biosciences with staff and facilities to match to the wide interests and backgrounds of students.
- Sports facilities at the Atherton Centre, which is just a few minutes walk away.
- 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](#).

## Outcomes

### 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 Biochemistry.
- critically evaluate the concepts, techniques and applications of Biochemistry
- develop the practical and transferable skills necessary for a career in Biochemistry and related areas.
- develop responsibility for independent learning.

#### What will you learn?

##### Knowledge

- The basis of an in-depth knowledge of the biology of disease at the molecular level.
- An awareness of current progress and research in medicine and areas pertaining to medicine.
- An awareness of the contribution made by Biomedical Scientists to the diagnosis and treatment of injury and disease.
- An understanding of the driving forces behind current research in the field.
- An awareness of the wider implications of scientific research on society as a whole.

##### Thinking skills

- The ability to comprehend, analyse and criticise published information.
- 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 analyse data from your own and other people's experiments and to interpret them in the light of published work.
- The ability to select and apply a range of practical skills relevant to biomedical science.
- The ability to design and carry out experimental work.
- The ability to effectively communicate your work to others by a variety of means.

- The ability to select and utilise appropriate computer software.

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

- 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.
- Communication skills.
- Team work.
- Time management

## **Structure**

### **The programme structure**

#### **Introduction**

All programmes are credit-rated to help you to understand the amount and level of study that is needed.

One credit is equal to 10 hours of directed study time (this includes everything you do e.g. lecture, seminar and private study).

Credits are assigned to one of 5 levels:

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

#### **Credit rating**

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

#### **Typical duration**

The expected duration of this programme is 3 years when attended in full-time mode or 5 years in part-time mode. It is possible to move from a full-time mode of study to a part-time mode of study and vice-versa, to accommodate any external factors such as financial constraints or domestic commitments. Many of our students make use of this flexibility and this may impact on the overall duration of their study period.

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

The teaching year begins in September and ends in June but some programmes also allow students to join at the start of Semester B, in February. .

A 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 80 credits in any academic year.

### What you will study when

This programme is part of a modular degree scheme. A student registered in a full-time attendance mode will take six 20 credit modules (or fewer, if any are 40 credit modules) per year . An honours degree student will complete modules totalling 120 credits at level one, modules totalling 120 credits at level 2 and modules totalling 120 credits at level 3.

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

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

Modules are defined as:

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

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

LEVEL	UEL Module Code	TITLE	SKILLS MODULES		CREDITS	STATUS SINGLE	STATUS MAJOR	STATUS JOINT	STATUS MINOR
			(Insert Y where appropriate)						
1	BS1000	Skills for Biosciences	Y		20		Core	Option	Option
1	BS1001	Cellular Biology			20		Core	Core	Option
1	BS1041	Human Physiology			20		Option	Option	Core
1	BS1010	Human Health and Disease			20		Option	Option	Option
1	BS1002	Cellular Processes			20		Core	Core	Option
1	BS1022	Microbiology			20		Option	Option	Option

2	BS2001	Metabolism		20	Core	Core	Option
2	BS2002	Molecular Biology		40	Core	Core	Option
2	BS2012	Molecular Genetics		20	Option	Option	Option
2	BS2011	Practical and Employability Y Skills		20	Core	Option	Option
2	BS2049	Physiological Function and Dysfunction		20	Option	Option	Option
2	BS2024	Medical Microbiology		20	Option	Option	Option
3	BS3015	Medical Biochemistry		20	Core	Core	Core
3	BS3045	Immunology		20	Option	Option	Option
3	BS3023	Infectious Disease Processes		20	Option	Option	Option
3	BS3016	Cellular Pathology and Haematology		40	Core		Option
3	BS3065	Independent Study and Research Project	Y	20	Core	Option	Option
3	BS3046	Applied Immunology & Transfusion Science		20	Option		-
3	BS3024	Infectious Disease Control		20	Option		-

### Requirements for gaining an award

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

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

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

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

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

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

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

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

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

(A foundation degree is linked to a named Honours degree onto which a student may progress after successful completion of the Foundation degree.)

## **Degree Classification**

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

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

and applying the mark obtained as a percentage, with all decimal points rounded up to the nearest whole number, to the following classification

- 70% - 100% First Class Honours
- 60% - 69% Second Class Honours, First Division
- 50% - 59% Second Class Honours, Second Division
- 40% - 49% Third Class Honours
- 0% - 39% Not passed

## **Assessment**

### **Teaching, learning and assessment**

#### **Teaching and learning**

Knowledge is developed through

- Lectures
- Tutorials
- Workshops
- Practicals
- Reading
- Internet, UELPlus 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

## Quality

### How we assure the quality of this programme

#### Before this programme started

Before the programme started, the following was checked:

- there would be enough qualified staff to teach the programme;
- adequate resources would be in place;
- the overall aims and objectives were appropriate;
- the content of the programme met national benchmark requirements;
- the programme met any professional/statutory body requirements;
- the proposal met other internal quality criteria covering a range of issues such as admissions policy, teaching, learning and assessment strategy and student support mechanisms.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

- Module evaluations
- Student representation on programme committees (meeting each semester)
- Personal tutor, module leader, pathway 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 noticeboard

### **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

## **Further Information**

### **Alternative locations for studying this programme**

<b>Location</b>	<b>Which elements?</b>	<b>Taught by UEL staff</b>	<b>Taught by local staff</b>	<b>Method of Delivery</b>
-	-	-	-	-

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

Further information about this programme is available from:

- The UEL web site
- The student handbook
- Module study guides <http://www.uel.ac.uk/hab/>
- UEL Manual of Regulations and Policies <http://www.uel.ac.uk/qa>
- UEL Quality Manual <http://www.uel.ac.uk/qa/>
- Regulations for the Academic Framework <http://www.uel.ac.uk/academicframework/>
- School web pages <http://www.uel.ac.uk/hab/>