Pharmacology

This version of the programme is no longer recruiting. Please refer to the updated programme specification for the programme of the same name.

Final award	BSc (Hons)
Intermediate awards available	Cert HE, Dip HE, BSc
UCAS code	B210
Details of professional body accreditation	N/A
Relevant QAA Benchmark statements	Biosciences
Date specification last up-dated	September 2012

Profile

The summary - UCAS programme profile

BANNER BOX:

This programme offers excellent employment prospects for a wide range of careers in the pharmaceutical industry particularly for students taking the third year sandwich option.

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 or Chemistry. We also accept Access to Science, AGNVQ or AVCE in Science at Merit grade and BTEC National Diploma in Science with a minimum of 6 modules at Merit grade. 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 other relevant qualifications are considered on an individual basis. For mature students, credit may be given for previous relevant experience (APEL). Direct entry to the second year of the programme is available for students with a Higher National Certificate or Diploma in a biological or chemical science, or for those who have successfully completed study equivalent to Level 1 at another university.

If you want to study Pharmacology but do not have the necessary entry qualifications, why not start with our extended degree programme I pharmacology which feeds in to level 1.

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 Pharmacology

Pharmacology is the study of drugs; their biological effects on physiological systems and application to the prevention and treatment of disease. Pharmacology is at the interface of biochemistry, human physiology, molecular biology and toxicology, all of which are studied in this degree.

Pharmacology at UEL

- The aim of the programme is to introduce you to all aspects of the subject including biochemical and molecular pharmacology, cardiovascular pharmacology, immunopharmacology, psychopharmacology, drug discovery processes and toxicology.
- We offer a full programme of laboratory practicals, including an individual research project and the option of taking a credit rated 48 week sandwich placement.
- The flexibility of sharing a common first year (Level 1) with our other Bioscience degrees provides you with the option of transferring to another degree programme on completion of the year

Programme structure

- Most students follow a 3-year full-time BSc(Hons) programme, however the 4-year sandwich, 4- or 5-year extended and part-time (minimum of 41/2 years) routes are also available.
- Pharmacology is also available as part of a combined honours programme
- Level 1 is designed to bring students from a diversity of backgrounds to a common understanding of a number of generic and specific skills required for progress to Level 2 of any of the Bioscience degrees at UEL. These include HE study and ICT skills, biology, chemistry, cell biology, genetics, human physiology, microbiology, statistics and experimental design. At Level 2 you will study modules (modules) in advanced human physiology, pharmacology, and biochemistry and molecular biology. At Level 3 (the third year for full-time or fourth year for sandwich students), areas of pharmacology introduced at Level 2 are studied in depth, together with toxicology and a laboratory or non-laboratory based research project.

Learning environment

Learning is encouraged through participation in a wide variety of activities including lectures, seminars, workshops, laboratory classes and computer-based/-aided learning (CBL/CAL). Each module has 5 to 6 hours formal contact per week, but you should allow yourself an additional 10 hours each week for private study (student-centred learning).

Success at degree level depends on developing your ability to study independently using the variety of learning resources on offer. The Level 1 programme will help you make the major shift from the more teacher-centred learning delivered at school or FE college to independent learning at HE.

Assessment

Students are assessed by a combination of continuous assessment (coursework) and an end of module examination. In the majority of modules, 50% of the mark is derived from coursework (laboratory practical reports, data analysis and interpretation, essays and seminar presentations) and 50% from the examination.

- Level 1 is formative which means that while you have to achieve a pass mark of 40% in all six modules, none of these marks contributes towards your final Honours degree classification (grade).
- The Level 2 and 3 modules are summative, all contributing towards your grade with the marks obtained at Level 3 modules given a higher weighting.

Work experience/placement opportunities

The 4-year sandwich programme offers you the experience of one year's work in a hospital, research organisation, small-medium biotechnological enterprise or large pharmaceutical company in the UK, EU or further afield. There is also the opportunity to gain 20 Level 2 credits if you choose to take the Work-based Learning module during the year.

Project work

- Project work is an essential component of an Honours degree programme and one that most students enjoy. Small projects and group seminars feature throughout the programme.
- At Level 3, an individual research project, equivalent to 40 credits, is undertaken by all students under the direction of a member of staff who also acts as their Personal Tutor

Added value

- Extensive personal support from a friendly and caring staff.
- A good practical and theoretical education.
- A sandwich year to enhance your curriculum vitae and increase your employment prospects on graduation.
- Availability of careers advice and support.

IS THIS THE PROGRAMME FOR ME?

If you are interested in...

- Developing your knowledge and understanding of how drugs act at the molecular level to prevent and treat human disease.
- Learning how new drugs are discovered and brought to market.
- Understanding why drugs produce side effects and why certain drugs are misused.
- Improving your skills in coherant scientific argument and analysis.

If you enjoy...

- Hearing about biomedical research developments in the media.
- Finding out more about therapeutic and recreational drugs and environmental toxins.
- The challenge of understanding how pollutants affect us and our environment.

- Carrying out scientific experiments and using ICT for analysis and information retrieval.
- Working as part of a team in the laboratory to solve problems.
- Plenty of opportunity for individual and small group student-centred learning.

If you want...

- The chance of reviewing your degree programme at the end of the first year with the possibility of changing to a related Bioscience degree.
- The option of a year's work experience in a laboratory away from the University.
- To be able to spend up to one third of your final year on your own research project (ICT-, laboratory- or library-based) at the university, or by agreement, in the laboratory where you enjoyed your work experience.

Your future career

This degree will enable you to pursue a career in pharmacological research and development with global pharmaceutical companies and small-medium biotechnological enterprises, government funded research institutes and laboratories. Non-laboratory based careers include working as a CRA (clinical research associate), in medical sales and pharmacovigillance with the Government's MHRA (medicines & health care products regulatory agency) or private industry.

Many graduates opt for further study and enrol on Masters and doctoral degrees to develop a deeper understanding of areas of their BSc (Hons) that stimulated their interest or to enhance their employment prospects with conversion programmes in business or computing.

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 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 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 School with friendly approachable staff and facilities to match to the wide interests and backgrounds of students.
- The Stratford Picture House multiplex cinema, the Theatre Royal (Stratford East), supermarkets, shops, restaurants, cafes and pubs are few minutes walk away from the university.
- Excellent transport links (National Rail, the Central and Jubilee tube lines and the Docklands Light Railway) from Stratford station (<5 min. bus ride or 15 min. walk away) can take you to the City and West End in between 10 and 20 min

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

- All students gain a broad overview of the biology field at level one. Thereafter you will acquire more detailed specialist knowledge in your chosen areas.
- The programme aims to provide a background to a large number of the scientific techniques used in biological 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.

Thinking skills

- The ability to comprehend, analyse and criticise published information in biology.

- 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 your chosen areas of biology.
- The ability to design and carry out experimental work.
- The ability to effectively communicate your work to scientists and the general public.
- The ability to select and utilise appropriate computer software.
- The ability to carry out literature searches effectively to find information on a specific topic.

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.
- Confidence.

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 4 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 field 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, major, joint and minor routes for this programme

LEVEL	UEL Module Code	TITLE	SKILLS MODULES (Insert Y where appropriate)	CREDITS	STATUS SINGLE	STATUS MAJOR	STATUS JOINT	STATUS MINOR

1	BS1000	Skills for Biosciences	Y	20	Core	Core	Option	
1	BS1001	Cellular Biology		20	Core	Option	Option	
1	BS1041	Human Biology		20	Core	Option	Core	Core
1	BS1010	Human Health & Disease		20	Core	Core	Option	Core
1	BS1002	Cellular Processes		20	Core	Core	Option	
1	BS1022	Microbiology		20	Core			
2	BS2041	Introductory Pharmacology		40	Core	Core	Option	Core
2	BS2002	Molecular Biology		20	Core			
2	BS2001	Metabolism		20	Core	Option		
2	BS2049	Physiology Function and Dysfunction		20	Core	Option	Option	
2	BS2050	Physiological Regulation		20	Core	Option	Option	
2	BS2042	Neuropharmacology	Y	20	Core	Core	Core	Core
		Work Based Learning (Sandwich year)			Option			
3	BS3033	Biochemical and Cellular Toxicology		20	Core		Option	
3	BS3034	Applied Toxicology		20	Core		Option	
3	BS3041	Systems Pharmacology		20	Core	Core	Core	Core
3	BS3042	Behavioural & Chemical Pharmacology		20	Core	Core	Core	Core
3	BS3063	Individual Research Project	Y	40	Core	Core	Option	

The Skills Modules listed in the Joint Route are Core, unless the equivalent Skills Modules are taken in your other combined subject.

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 if 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:

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

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

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

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 Quality and Standards Committee.

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

The role of the programme committee

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

The role of external examiners

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

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

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

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

Listening to the views of students

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

- Module evaluations
- 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 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

Location	Which elements?	Taught by UEL staff	Taught by local staff	Method of Delivery
-	-	-	-	-

Where you can find further information

Further information about this programme is available from:

- The UEL web site
- The student handbook
- Module study guides
- UEL Manual of Regulations and Policies
- UEL Quality Manual
- Regulations for the Academic Framework
- School web pages