

Biomedical Immunology

Final award	MSc
Intermediate awards available	PgCert, PgDip
UCAS code	N/A
Details of professional body accreditation	N/A
Relevant QAA Benchmark statements	Biosciences/Biomedical Sciences
Date specification last up-dated	July 2014

Profile

The summary - programme advertising leaflet

Programme content

This modular programme aims to produce postgraduate students with a sound knowledge of both practical and theoretical aspects of the specialist area of Immunology, with emphasis on its clinical applications. It aims to provide the necessary skills and knowledge to undertake individual and collaborative research in this field.

This programme has been designed for students wishing to make a career in immunology. As in other areas of biology, the cutting edge of research is primarily focussed at the molecular level using the recently developed, and constantly improving, techniques in molecular biology, genomics and proteomics. Knowledge in this area is expanding rapidly leading to a better understanding of how the immune system responds to pathogens and how it can be manipulated for therapeutic purposes in procedures such as transplantation and vaccination. In this programme you will study these areas in some depth. The focus of the programme is not simply on the state of current knowledge but also the methodology used in obtaining that knowledge, making use of recent research papers to inform class discussion.

In addition to taught modules in the field you will also be trained in research processes, culminating in an individual research project which will give you the opportunity to demonstrate your individual skills and abilities.

PgCert/PgDip/MSc in School of Biosciences at UEL

- The university has run an MSc in Immunology since 1980, but the current programme is a relatively new, having been validated in 2000.
- The programme comprises a mixture of taught modules and modules requiring independent study.
- Transferable and research skills and practical training are an integral part.
- The programme is supported by a newly equipped genomics and proteomics research facility.
- Much of the taught component is available on Web-CT allowing students to study at their own pace.

- There are close links between the staff and potential employers ensuring that the programme remains current and appropriate to their requirements.
- All students take two specialist subject modules and two core modules (Bioinformatics and an Independent Study module in an appropriate area). To complete the Masters programme, students undertake a further core module (Research Processes) and an individual research project.
- The School also offers Masters programmes in Independent Study, and in Work-based Learning.

Admission requirements

For entry to this programme, students are required to have a second class undergraduate honours degree from a UK university in a relevant subject e.g. physiology, microbiology, biochemistry or an equivalent qualification and/or experience. All students admitted to the University are required to have GCSE at grade C in Maths and English (or equivalent). For overseas students there is a requirement for an IELTS score of 6.0 or higher (or equivalent). Applicants whose qualifications do not conform to these criteria may be admitted to the programme at the admission tutors discretion. This will normally involve an interview.

At UEL we are committed to working together to build a learning community founded on equality of opportunity - a learning community which celebrates the rich diversity of our student and staff populations. Discriminatory behaviour has no place in our community and will not be tolerated. Within a spirit of respecting difference, our equality and diversity policies promise fair treatment and equality of opportunity for all. In pursuing this aim, we want people applying for a place at UEL to feel valued and know that the process and experience will be transparent and fair and no one will be refused access on the grounds of any protected characteristic stated in the Equality Act 2010.

Programme structure

- One year full time or two years part time
- Part time students study the taught modules in year 1 and the research modules in year 2.
- Taught modules are delivered in a semesterised system, with semesters running from September to January and February to June.

Learning environment

- Learning is encouraged through participation in a wide variety of activities including lectures, seminars, workshops, laboratory-based practicals, web-based learning etc .
- In addition all students are expected to read extensively in their own time. Much of this reading will be directed.
- Success at university depends on developing your ability to study independently using library resources, Computer-assisted learning (CAL), handouts and web-based study activities.
- These skills are reinforced in modules in the first semester. These enable us to assess your independent learning needs at university, and also help to develop those transferable skills so important in working life.

Assessment

- Students are assessed in practical work and theory.

- In taught modules 40% 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 the remaining 60% from unseen written theory examinations at the end of the semester.
- Independent study modules are mainly assessed by coursework usually involving some form of presentation
- The pass mark for all modules is 50%
- On completion of the programme students must normally present themselves for an oral examination.

Relevance to work/profession

- The curriculum is tailored to current demand in this field.
- Emphasis is placed on the development of skills as well as academic knowledge.
- Part-time students in relevant employment may be permitted to carry out research projects at their place of work.

Thesis/Dissertation/project work

- Project work is an essential component of a Masters degree programme and one that most students enjoy. Small projects and group work exercises feature throughout the programme.
- The individual research project is the culmination of the programme and contributes over 25% of your final mark.
- Project work encourages students to show initiative in their individual work under supervision, using appropriate analytical techniques to generate and interpret new data.
- Dissertation preparation develops literature researching, presentation and written communication skills essential in professional life.

Added value

- Extensive personal support throughout the programme.
- Staff with extensive experience of teaching students from a wide range of backgrounds.
- Sound practical as well as academic training.
- Access to modern research facilities.
- Effective careers advice and support available.

Your future career

Most graduates would be expected to pursue research careers in the Pharmaceutical Industry, in the National Health Service or Health Protection Agency, in academic research in Universities, research institutes etc. Many students go on to laboratory based careers but there are also careers in areas such as scientific sales and management, clinical data management etc. This degree can also be utilised by those students who have less specific career aspirations but enjoy the challenge of scientific study at this advanced level.

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 Degree pathway 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](#).

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

Students completing this programme should:

- Display a sound knowledge of immunology and its clinical applications.
- Be able to discuss current knowledge in the subject, and the techniques used in their investigation.
- Possess skills in the selection, planning, performance and interpretation of a range of appropriate experimental techniques.
- Be aware of the increasing value of bioinformatics in the study of medical microbiology and be able to select and utilise appropriate databases.
- Demonstrate autonomy in their learning.
- Be able to analyse and interpret complex and sometimes contradictory scientific information.
- Be able to engage in professional and academic communication with others in their specialist field.
- Have the ability to contribute to the development of the subject through applied study or research.
- Be able to reflect on their own performance and that of others, resulting in subsequent improvement .
- Develop an informed, critical and imaginative attitude to professional practice appropriate for those with responsibility for sections of science based industry.

What will you learn?

Knowledge

- A sound biological foundation and knowledge of both the practical and theoretical aspects of immunology.
- Detailed knowledge in molecular aspects of immunology at the current limits of research understanding.
- The principles of bioinformatics and its application to immunology.

Thinking skills

- The ability to use integrated approaches to analyse and interpret complex and contradictory scientific information autonomously and to accurately assess and criticise your own and others' work.
- An awareness and understanding of the ethical constraints associated with the subject and the ability to relate these to your own experience.
- The ability to contribute to the development of the subject through applied study or research.
- The ability to solve problems in science.

Subject-Based Practical skills

- The ability to select and apply a range of practical skills relevant to the study of immunology.
- A higher level of competence in laboratory skills.
- An ability to isolate, assess and resolve problems independently and to react effectively to unusual and unexpected situations.

- An improved ability to engage in professional and academic communication with others in your specialist field.
- The ability to select and utilise appropriate computer software, and to understand its limitations in presenting scientific data.

Skills for life and work (general skills)

- Increased ability to take responsibility for your own learning and the ability to work with and motivate others.
- Ability to reflect critically your own and others' performance resulting in the improvement of subsequent actions.
- Increased confidence in your own abilities.
- Improved skills in written and verbal communication of complex information.

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

A total of 60 or 120 CATS points at level M are needed for the award of a Postgraduate Certificate or Diploma respectively. A total of 180 CATS points at level M are needed for the award of an M.Sc.

Typical duration

The typical duration of this programme is one calendar year full-time or two years part-time. It is possible to move from full-time to part-time 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 is divided into two semesters of roughly equal length. Teaching and assessment of individual modules is completed within each semester. For part-time students, attendance is required on one full-day per week, for full-time students attendance is normally two days but this may be increased during the research project.

What you will study when

Part-time students study one specialist module together with Research Skills in Year 1, providing 60 CATS credits at Level M. These lead on to a second specialist module and Bioinformatics in year 2. These provide an additional 60 CATS credits at Level M. The Research Project is carried out over the two Summer periods and provides the remaining 60 CATS credits to complete the MSc. Full time students complete the whole programme in a single calendar year.

The modules which make up the programme are listed below.

Year FT (PT)	Module title	credit status	
1(1)	Biomedical Immunology (Semester A) - BS7005	30	Core
1(2)	Applied Biomedical Immunology (Semester B) - BS7006	30	Core
1(2)	Bioinformatics (Semester A/B) - BS7001	30	Core
1(1)	Research Skills (Semester B) - BS7002	30	Core
1 (1/2)	Research Project (Summer)	60	Core

Requirements for gaining an award

- In order to gain a Postgraduate Certificate, you will need to obtain 60 credits at Level M.
- In order to gain a Postgraduate Diploma, you will need to obtain 120 credits at Level M
- In order to obtain a Masters, you will need to obtain 180 credits at Level M. These credits will include a 60 credit level M core module of advanced independent research.

Masters Award Classification

Where a student is eligible for an Masters award then the award classification is determined by calculating the arithmetic mean of all marks 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% Distinction

60% - 69% Merit

50% - 59% Pass

0% - 49% Not Passed

Assessment

Teaching, learning and assessment

Teaching and learning

Knowledge is developed through

- Lectures
- Seminars and workshops
- Student centred learning – directed reading, assignment preparation.

Thinking skills are developed through

- Tutorials
- Seminars and workshops
- Report writing and assignments
- Project work

Practical skills are developed through

- Laboratory practical sessions
- Individual research project
- Data analysis exercises
- Use of IT and library based resources
- Student presentations

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

- Student centred learning
- Seminar and workshop discussions
- Oral and written presentations
- Computer assignments
- Managing time
- Team work

Assessment

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.

- 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.
- Critical review of practical exercises.
- Data Interpretation exercises.
- The ability to use subject knowledge in setting a piece of practical research work in its scientific context, and to present the results obtained in a logical and coherent manner.

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 as evidenced by laboratory notebook entries, practical reports and project dissertation.
- The ability to complete assignments using appropriate resources such as IT and library facilities.
- 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.

Listening to the views of students

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

- Module evaluation questionnaires
- Student representation on the programme committee (meeting 2 times a year)
- Informal discussions with tutors

Students are notified of the action taken through:

- circulating the minutes of the programme committee to all members
- providing details on the programme noticeboard
- Oral feedback to students

Listening to the views of others

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

- Feedback from previous students
- Discussions with local 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](#)