Introduction

Malfunction of the immune system underlies many illnesses and chronic inflammatory diseases. Immunology with pharmacology is therefore concerned primarily with scientific aspects of the two disciplines and how they combine in the application of immunological techniques and theory to the study of the effects of drugs, especially on the immune system and how drugs may be used to control infection and disease. It is also concerned with processes by which drugs are absorbed, distributed in the body, metabolised and excreted and with ways in which drugs are used, for example as medicines or as experimental tools for advancing our understanding of the body in health and disease.

The degree of Immunology & Pharmacology at Aberdeen is an exciting and original new programme which will provide our students with an excellent grounding in two of the most important and cutting-edge scientific disciplines. These disciplines are essential to the development of new drugs and therapeutic approaches for many of the chronic diseases which have proven difficult to treat or cure in the past.

The degree of Immunology & Pharmacology offers excellent prospects for research careers in Academia, Industry, the Scientific Civil Service and Hospitals. Alternatively, it may lead on to non-research or non-pharmacological careers, for example in Marketing, Publishing or Teaching or be used as an entry qualification for certain postgraduate courses e.g. M.Sc. courses in Clinical Pharmacology, Immunology, Toxicology, Medicinal Chemistry, Forensic Science, Endocrinology or Information Science. The course is offered by the School of Medical Sciences. The degree does not lead on to a career in Pharmacy.

Aims and Outcomes

This degree course aims to instil a broad base of knowledge about drugs and immunology at the molecular, cellular, tissue and systems level. Additionally, students will gain an in depth understanding of selected aspects of immunology and pharmacology, particularly those which reflect the research expertise and strengths of the School. These are neuropharmacology, toxicology, systems immunology, autoimmunity, inflammation, asthma and immune regulation. Students are expected to conduct an original research-based project in their final year. In carrying out this task, analysing the results obtained and then presenting them both orally and as a thesis, students will develop important transferable skills. These skills, which will be taught throughout the course, include expertise in experimental design, in selective reading, in the objective and critical interpretation of data, in the preparation of scientific reports and in the use of computer software packages for word processing, for data handling and for producing figures and diagrams.

General Enquiries

All general enquiries concerning this degree scheme should be addressed to the Degree Coordinators (Dr S.J. Tucker, s.j.tucker@abdn.ac.uk and Dr I Crane, i.j.crane@abdn.ac.uk) who
are available by appointment most days of the week in term time. Specific information regarding each of the modules making up the scheme can be obtained from the Course Co-ordinator for that module. The Head of School is always available for advice regarding any of the degree schemes run by the School and for careers advice. In the first instance, appointments to see any of the above staff should be made with Ms Jill Reid (jill.reid@abdn.ac.uk) at the School Office sited on the 2nd floor, Institute of Medical Sciences (01224-437470 internal 7470).

General Requirements

In order to complete the degree scheme the programme of studies must comply with the Supplementary Regulations for the Degree of Bachelor of Science in Pure Science (BSc). Entry into the final Honours year is subject to permission by the Head of School, the student having first obtained credits representing a minimum of 14 units of study at levels 1 and 2 and 8 units of study at level 3. It is not competitive (i.e. there are sufficient places for all students who reach the required standard at the end of year 3). In order to graduate with the Honours degree 120 credits must be obtained at level 4 (see below).

Industrial Placements

There is scope within the degree schemes for students with very good academic records to undertake a 1 year, paid, industrial placement as part of their degree. The placement is undertaken in year 4 of the degree scheme and students return to the University to complete their honours year in year 5. This work experience is co-ordinated by the School although placements are in companies outside the University.

Students interested in industrial placements are encouraged to contact Dr Allison Carrington in the first instance to discuss their plans.

Students must also register for, and complete, the pre-placement course, BT3006, in the first half of their third year. On successful completion of a placement and their honours year students will graduate with an MSci. Further details of this initiative can be obtained from Dr Allison Carrington (a.carrington@abdn.ac.uk).

Looking Forward to the Honours Year

Many of you will be intending to continue for a 4th year and to complete an Honours degree in the Biomedical Sciences discipline. There are a few points you should bear in mind if this is your intention.

1. Standard of entry

We try to welcome as many students as possible into the Honours year, but it must be recognised that it will only benefit the more able students. If 3rd year is a real struggle, then it may be too much for you to take on. As a general rule, we think that a CAS mark of 12 or better in each 3rd year module is a reasonable sign that you have reached the appropriate standard. Exceptions can be made if there is good reason, and a mixture of excellent results and one or two slightly poorer ones may sometimes be acceptable. Do let us know if there is an explanation for any poor performance, so that we can do our best to take it into account.

2. Know what’s involved

The teaching in the Honours year in general involves fewer lectures and more input from you than in previous years. You will take the modules specified for your particular degree scheme, these amounting to 22 elements of study. You are required to include IM4006 Current Research in Immunology, PA4005 Molecular Pharmacology, PA4302 Molecular Toxicology and a 60 credit Honours Project in your study programme. You will write a thesis and give a short presentation on
your project. For all students taking an Honours project the final degree assessment will comprise of a 36% contribution from the thesis, and a 64% contribution from the papers associated with the taught modules taken in the Honours year, a paper on data analysis and interpretation, and a general essay paper.

3. Prerequisites

Check that the courses you plan for 3rd year provide the foundation for the Honours degree you hope to take. Please refer to the appropriate Degree Programme Guide (Available from the World Wide Web School of Medical Sciences home page or from the School Office, Teaching Labs). If in doubt, consult your Personal Tutor, or the appropriate Degree Programme Co-ordinator (for Immunology & Pharmacology, Dr Steve Tucker, Tel:- 437491 or Dr Isabel Crane, Tel:- 437529). Please do this in plenty of time.

4. Summer research projects

It is possible to apply for funding for summer projects (8-10) weeks between 3rd and 4th year. This is a helpful base for your Honours project, which must be in a different area of research and usually with a different supervisor. Dr Allison Carrington will email members of the class at the end of November asking for CVs if they wish to be considered for a summer vacation studentship, and if they have any preferences for staff in whose laboratory they would wish to undertake the work.

Assessment

Throughout your course, assessment takes the form of continuous assessment (based upon performance in prescribed tasks such as practical reports and essays) and written degree examinations (essay questions) taken in the examination diets allotted to each half session. The final year assessment is made up of five essay papers one of which includes an in depth problem solving/analysis paper and the submission of a thesis. The thesis is based on a 10-week research project. Details concerning assessments and course work are provided in the Course Handbooks associated with each specific module. These Course Handbooks are available either from the School Office or on the SMS World Wide Web Pages (http://www.abdn.ac.uk/sms). Details concerning the relationship between credits and weightings may be found on http://www.abdn.ac.uk/sms

Academic Appeals

1. From time to time a student may seek to appeal against a decision involving academic judgement taken, in terms of the Regulations for the degree or other qualification for which he or she is studying, among others, by the Head of School refusing an award of a Merit Certificate, or admission to a higher level course; by Examiners refusing to award a pass or awarding an unacceptable class of Honours (or making no award); by the Examiners appointed to examine a thesis for a higher degree; or by the relevant Undergraduate Programme Committee or Academic Postgraduate Officer in relation to terms of study. Specific rights of appeal are very limited indeed but the Senate has a general duty to regulate and superintend the teaching of the University, and the Court has the authority to review any decision of the Senate which may be appealed against by a member of the University.

2. Academic appeals must be lodged with the Academic Registrar within 14 days from the date of the issue of the decision being appealed against, unless the relevant Appeals Committee constituted under 7 or 8 below is satisfied that the decision had not become known to an appellant until too late to submit an appeal within that period.

3. Notwithstanding the above time limit, details of illness (which must be certified by a medical practitioner) and/or other personal circumstances which students believe may have affected their performance in an element of prescribed degree assessment will be accepted as grounds for appeal only if the Head of the relevant School has received written notification of them no later than one week after the date on which a student submitted or appeared for the assessment concerned.

Where good reasons have prevented a student from notifying the Head School within this period, the student should write to the School as soon as is practicable and give details both of the illness
(which must be certified by a medical practitioner) and/or other personal circumstances and of the events which prevented him or her from notifying the Head of School within the prescribed period. Details reported after notification of a result will be accepted as grounds of appeal only in exceptional circumstances.

**Course Details**

All courses run in the School have practical and enterprise components as integral parts of the teaching package. For detailed descriptions of the courses that make up the BSc (Hons) Immunology & Pharmacology Degree consult the University Course Catalogue, or in the case of modules taught within the School of Medical Sciences consult the SMS World Wide Web Pages. This document supplements the regulations in the University Calendar and the descriptions of modules given in the University "Catalogue of Courses". It is correct at the time of going to press but is open to change.

**1st Year Immunology & Pharmacology Course Requirements**

**Prescribed Level One Courses**

**First Half Session**

- Introduction to the Medical Sciences (SM1001, 15 credits)
- Chemistry for Life Sciences 1 (CM1020, 15 credits) or Chemistry for Physical Sciences (CM 1021, 15 credits)
- Introduction to the Science of Sport, Exercise & Health (SR1002, 15 credits) and one other course of your choice worth 15 credits.

**Second Half Session**

- Chemistry for Life Sciences 2 (CM1512, 15 credits)
- The Cell (SM1501, 15 credits) and two other courses worth 30 credits

**Timetable for Year 1**

<table>
<thead>
<tr>
<th>First Half Session</th>
<th>Second Half Session</th>
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<tbody>
<tr>
<td>SM1001</td>
<td>SM1501</td>
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<tr>
<td>CM1020/CM1021</td>
<td>CM1512</td>
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<tr>
<td>SR1002</td>
<td>Two other 15 credit courses</td>
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<td>One other 15 credit course</td>
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**2nd Year Immunology & Pharmacology Course Requirements**

**Prescribed Level Two Courses**

**First Half Session**
Physiology of Human Cells (BI20B2, 15 credits)
Foundation Skills for Medical Sciences (SM2001, 15 credits)
Molecular Biology of the Gene (BI20M3, 15 credits) and
Genes & Evolution (BI2017, 15 credits)

Second Half Session

Physiology of Human Organ Systems (BI25B2, 15 credits)
Research Skills for Medical Sciences (SM2501, 15 credits)
Energy for Life (BI25M7, 15 credits) and
Microbes, Infection & Immunity (BI25M5, 15 credits)

Timetable for Year 2

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<td>BI25B2</td>
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<tr>
<td>SM2001</td>
<td>SM2501</td>
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<td>BI20M3</td>
<td>BI25M7</td>
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<td>BI2017</td>
<td>BI25M5</td>
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3rd Year Immunology & Pharmacology Course Requirements

Prescribed Level Three Courses

First Half Session

Biochemical Pharmacology & Toxicology (PA3004, 30 credits)

Second Half Session

Mechanisms of Disease and Principles of Chemotherapy (PA3802, 15 credits)
Cardiovascular Physiology and Pharmacology (BM3501, 15 credits)
Fundamentals of Immunology (IM3501, 30 credits)

To meet the requirements for Enhanced Study, in addition to the 90 credits prescribed for your Degree Programme, you are required to take another 30 credit level 3 course of your choice. The School of Medical Sciences runs the following three Disciplinary Breadth courses at level 3 which may be of interest to students studying Medical Sciences Degree Programmes.

- SM3001 Frontiers of Molecular Medical Sciences
- SM3002 Frontiers of Biomedical Sciences
- SM3003 Frontiers of Applied Medical Sciences
**Timetable for Year 3**

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<td>PA3802 IM3501</td>
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<tr>
<td>PA3004</td>
<td>BM3501</td>
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**4th Year Immunology & Pharmacology Course Requirements**

**Prescribed Level Four Courses**

**First Half Session**

- Molecular Pharmacology (PA4005, 15 credits)
- Molecular Toxicology (PA4302, 15 credits)
- Current Research in Immunology (IM4006, 30 credits)

**Second Half Session**

- Pharmacology or
- Immunology Project (IM4504, 60 credits)

**Timetable for Year 4**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>PA4005</td>
<td>PA4302</td>
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<tr>
<td>IM4006</td>
<td>IM4504</td>
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BM4901 General Paper
BM4902 Data Analysis and Problem Solving Paper