University of Strathclyde Science

MSc

# ADVANCED IMMUNOLOGY

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The course provides comprehensive postgraduate life sciences training with three elements:

- Dedicated training in a broad suite of practical laboratory skills
- Two unique classes that develop skills in statistics, presentations, career development, ethics and science writing skills
- Taught classes which capture the excitement of cutting-edge research fields and teaching by active researchers or practicing clinical professionals

You will benefit from the highest-quality teaching in the leading Institute of Pharmacy and Biomedical Sciences in Scotland. Lectures, tutorials, practical sessions and workshops will be delivered by expert clinicians and clinical biochemists from the National Health Service.

## Class Profile

Course participants are recent graduates and early-career professionals from a variety of backgrounds, from the UK, EU and overseas, all with a common desire to be challenged and a real passion for the value of immunology in understanding how the body defends itself against disease.

## Programme Skills Set

On the programme you will study:

- transferable skills in statistics, communication, ethics, science writing and critical analysis of data

- two semesters of laboratory work to gain the practical and interpretational skills to prepare for your project and future career
- optional classes in *in vivo* biology, drug discovery or haematology.
- compulsory class in Immunology, and choice of either Clinical Immunology or Applied Immunology
- a summer project in research laboratory

## Careers

Graduates should ideally be qualified for positions in the biomedical and pharmaceutical industries as well as hospitals and universities.You may also wish to continue studies for an MPhil or PhD degree.
The course provides the background training for a career in:

- clinical immunology
- pharmaceutical and biotechnology industry laboratory research posts

- laboratory technical support
- medical/pharmaceutical/life science sales
- academia – following a PhD route

### Compulsory Classes

- Generic Skills for Biomedical and Pharmaceutical Students – refine your core skills in statistics, data presentation and career development; learn about the ethical choices and dilemmas you may encounter in your scientific career
- Entrepreneurship – find out from the experts what it takes to translate ideas in biomedical sciences into patents, business plans and spin-out companies
- Postgraduate Studies in Immunology – learn about various aspects of protective and pathological immune responses to infections with various pathogens and address strategies for vaccinations against these pathogens
- Statistics – a comprehensive, week-long class that gives you the tools you will need in your scientific career, and knowledge on when to apply them
- Advanced Techniques in Biomedical Research 1 & 2 – two compulsory laboratory classes familiarise you with the key research skills relating to the biochemistry, pharmacology, microbiology and immunology fields, help develop your skills in data analysis and report writing, and pave the way for a smooth transition into your summer research project
- Advanced Topics in Biomedical Research – an innovative class designed with three outcomes:
    - become an expert in the field that you will study for your research project and learn how to write a review paper of publication quality
    - learn from the experts about how a scientific research career works and write the outline of a hypothetical research grant application
    - enhance your teamworking ability on a project to develop a hypothetical therapy from an initial idea through to licensed drug treatment; learn how to manage a project's timelines and targets, and experience the world of big data manipulation and analysis
- Research Project – choose from a selection of project topics in Semester 1, engage with your supervisor to plan the work, and start your laboratory work at the end of May
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## Optional Classes

- *In Vivo* Biology – gain practical experience in the safe and ethical application of *in vivo* research through training to Home Office Personal Licence standard; discover how *in vivo* biology has driven the development and testing of new drugs and medical techniques that save and improve human lives
- Drug Discovery – explore the pathway from pathology or biological pathway to small molecule drug candidate in this unique class; become familiar with the modern laboratory assays and screening approaches used by the pharmaceutical industry to develop their blockbuster drugs
- Postgraduate Studies in Haematology – explore the science and regulation of blood and blood products within the National Health Service; study materials includes immunodiagnostics, immunohaematology and transfusions, and immunopharmacology
- Postgraduate Studies in Applied Immunology– gain an understanding of immunotherapy in disease, the production of immunological reagents, use of immunological assays and vaccination strategies
- Postgraduate Studies in Clinical Immunology – learn about the immune responses associated with transplantation, cancer, autoimmunity, allergies and immunodeficiency

## Course Duration

12 months full-time

## Entry Requirements

First- or second-class Honours degree, or equivalent, in a biological or chemical discipline.

**English language:** IELTS 6.5 (with no component below 5.5) is required for all non-English speakers.

## Fees and Funding

For information on current fee levels, see: **www.strath.ac.uk/studywithus/feesfunding/tuitionfees**

A number of scholarships are available for outstanding UK, EU and international applicants. For details, please visit **www.strath.ac.uk/studywithus/scholarships**

## Further Information and How to Apply

For further information and how to apply, please visit **www strath.ac.uk/courses/postgraduatetaught/advancedimmunology**

## Contact

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