



University of
Strathclyde
Science

MSc

ADVANCED BIOCHEMISTRY

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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 biochemistry in understanding the molecular basis of life.



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 Biochemistry and choice of either Clinical Biochemistry or Applied Biochemistry
- 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 biochemistry
- 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 Biochemistry – learn about aspects of fundamental physiology, cell biology, biochemistry and genetics which contribute to human disease
- 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

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 Clinical Biochemistry – explore the range of diseases and disorders afflicting human body systems and discover how they are diagnosed by clinical biochemists working within the NHS
- Postgraduate Studies in Applied Biochemistry – study new approaches to understand protein structures through crystallography and bioinformatics; learn how commercial biochemistry is producing the products and therapies of the future, and discover how cell/animal models are used in research and development; gain insights into the future of genome editing and biological engineering

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/postgraduate/taught/advancedbiochemistry

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the place of useful learning

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Information current at April 2017. Please consult the University website for the most up-to-date information. The University of Strathclyde is a charitable body, registered in Scotland, with registration number SC015263