

Biochemistry

BSc (Hons)

College of Science,
Engineering and Food
Science



University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Introduction

Biochemistry is the study of living organisms, particularly humans, at the cellular and sub-cellular levels. It is at the heart of advances in molecular biology and biotechnology and their many applications in medicine, agriculture and pharmaceuticals. Biochemistry is also an excellent stepping stone for entry into medicine, dentistry and pharmacy.

Why Study

Biochemists investigate how molecular processes go wrong in disease and use this information to develop new diagnosis and new drugs for treating human disease. Because biochemistry is concerned with 'the molecules of life', it is central to all areas of human and animal biology.

The aim of the course is:

- to educate students in the broad area of biochemistry, molecular and cell biology, biomedicine and biotechnology
- to provide students with a solid foundation for carrying out research
- to train students in analytical methods
- to develop a solid foundation among students in critical thinking and analysis.

Work Placement

While there is no work placement incorporated into this course, the School of Biochemistry and Cell Biology facilitates students in finding summer laboratory work. In addition, in Year 4, each individual carries out an independent research project, which students find to be a highlight of the course.

Study Abroad

UCC offers a wide range of study abroad options, most particularly in Europe and North America. Please check www.ucc.ie/en/international abroad.

Careers

Biochemistry graduates work in the biotechnology, pharmaceutical, biomedical, environmental monitoring, and medical diagnostic areas. Biochemists also work in the education sector as teachers and lecturers. A large number of BSc graduates opt for further training through MSc and PhD degrees, as this enhances job opportunities and career development prospects.

Further Study

- MSc Biotechnology
- MSc Molecular Cell Biology
- MRes
- PhD Science
- Medicine
- Pharmacy

CK402

DEGREE OUTLET

COURSE PAGE ONLINE

www.ucc.ie/en/ck402/biochemistry

CONTACT INFORMATION

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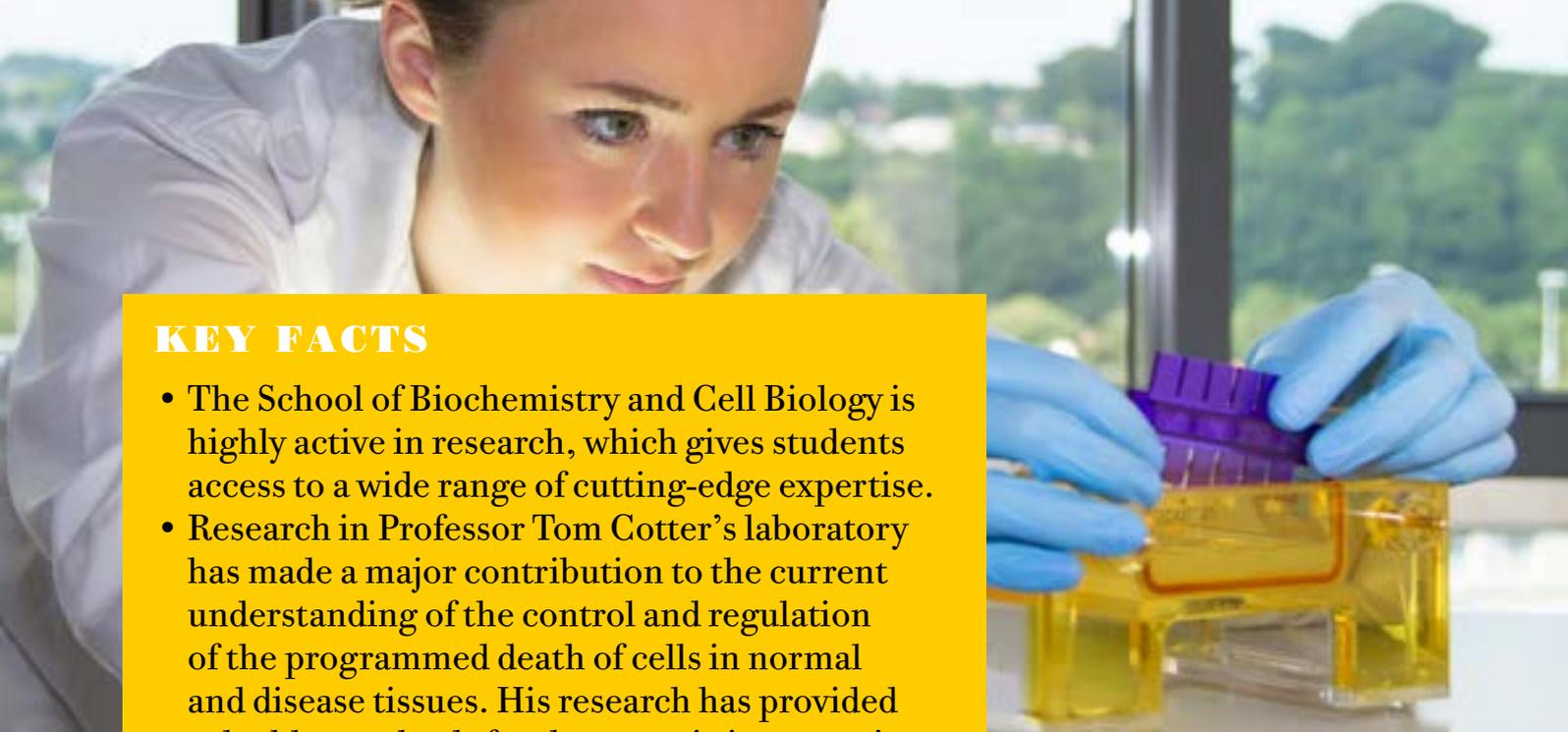


AOIFE McCARTHY
GRADUATE

"The theoretical and practical knowledge I gained during my degree in biochemistry set me up perfectly for a career in the BioPharma industry."



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KEY FACTS

- The School of Biochemistry and Cell Biology is highly active in research, which gives students access to a wide range of cutting-edge expertise.
- Research in Professor Tom Cotter's laboratory has made a major contribution to the current understanding of the control and regulation of the programmed death of cells in normal and disease tissues. His research has provided valuable new leads for therapeutic intervention in cancer.
- Professor Rosemary O'Connor's research has made a major contribution to the current understanding of the action of the insulin-like growth factor in cancer and has provided valuable new leads for drug development in cancer research.

Year 3 Modules

CORE: Structural Biochemistry; Introduction to Cell Biology and Biomembranes; Cell Signalling; Biochemical Immunology; Molecular Biology; Principles of Medical Genetics; Biochemistry of the Central Nervous System; Biophysical and Biochemical Methods; Bioinformatics; Literature Project

ELECTIVES: Environmental Chemistry and Analysis; Medical Microbiology; Virology; Transmission and Epidemiology of Infectious Disease; BioPharmaceutical Engineering; Cell and Epithelial Physiology; Introduction to Pharmacology; Introduction to Toxicology; Chemotherapy and Pharmacology of Inflammation

Year 4 Modules

Advanced Cell Biology; Protein Science; Biochemical Toxicology; Cancer Biology; Biochemical Analysis and Research Methods; Molecular Basis of Brain Disorders; Advanced Metabolism in Health, Disease and Cancer; Principles and Applications of Biotechnology; Developmental Genetics; Research Project

Year 1 Modules

CORE: **BL1002** Cells, Biomolecules, Genetics & Evolution (5 credits); **BC1001** Introduction to Biochemistry and the Biological Basis of Disease (5 credits) **BL1004** Physiology and Structure of Plants and Animals (5 credits); **CM1200** Fundamentals of Modern Chemistry I (10 credits); **MA1001 & MA1002** Calculus for Science Parts 1 & 2 (5 credits each); **PY1010** Physics for Biological and Chemical Sciences (10 credits);

ELECTIVES: **BL1005** Introduction to Ecology (5 credits); **BT1001** Biotechnology (5 credits); **CM1201** Fundamentals of Modern Chemistry 2a (10 credits)

Year 2 Modules

CORE: Principles of Human Structure; Mammalian Cell and Tissue Structure; Biomolecules; Principles of Metabolic Pathways; Fundamentals of Microbiology; Principles of Microbiology; Introductory Molecular Biology; Introductory Physiology; Introduction to Biostatistics

ELECTIVES: Main Group and Transition Element Chemistry; Fundamentals of Organic Chemistry; Energetics and Kinetics; Aromatics, Carbonyls and Alkenes; Spectroscopy; Introduction to Plant Biotechnology; Vertebrate Diversity; Fundamentals of Ecology



FIONA CAHILL GRADUATE

"I found the biochemistry course very rewarding, particularly in my final year when I was given the opportunity to undertake my own research project. My BSc in Biochemistry was an essential part of my acceptance onto a PhD programme in cancer research at Oxford University."

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