

Biotechnology

BSc

College of Science,
Engineering and Food
Science



University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

Introduction

Biotechnology is the specific manipulation of biological organisms to create and/or improve products and processes.

Why Study

Biotechnology has a huge impact in nearly every facet of our everyday lives. It is a modern and dynamic science that focuses on the application of basic research. Biotechnology is a wide-ranging discipline ideal for students who have a broad interest in the application of life sciences for the benefit of mankind. The applications of biotechnology are varied and range from the production of fermented foods to the production of life-saving drugs, i.e. biopharmaceuticals.

Work Placement

Biotechnology provides students with a 5-month work placement in a biotechnology-related company, generally in the Munster area. Placements are arranged with the UCC Student Development and Employability Office who will also provide training in CV preparation and interview technique.

Careers

The BSc Biotechnology will provide an excellent training in modern biotechnology, including molecular biology, food biotechnology, immunology, bioinformatics and process engineering. Graduates pursue careers in a wide range of areas including research (in academia or industry), product development, project management, quality control.

Further Study

- MSc Bioinformatics and Computational Biology
- MSc Food Microbiology
- MSc in Molecular Cell Biology with Innovation
- PhD Microbiology (Research training programme)
- PhD Biochemistry and Cell Biology (Research training programme)
- MSc Microbiology (Research training programme)
- MSc Biochemistry and Cell Biology (Research training programme)
- Graduate Entry Medicine.

CK402

DEGREE OUTLET

COURSE PAGE ONLINE

www.ucc.ie/ck402/biotechnology

CONTACT INFORMATION

Dr David Clarke

T: +353 (0)21 490 3624

E: david.clarke@ucc.ie

www.ucc.ie/en/microbiology



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KEY FACTS

- The BSc Biotechnology is ideal for students with a broad interest in using biology to improve products and processes
- The BSc Biotechnology is unique as it is the only CK402 Life Sciences outlet that has an obligatory work placement
- The BSc Biotechnology offers a unique combination of microbiology and biochemistry and it is focused on biotechnological applications
- A BSc in Biotechnology is an excellent foundation for a career in research and/or industry

Year 1 Modules

CORE: **BL1002** Cells, Biomolecules, Genetics and 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** and **MA1002** Calculus for Science Parts 1 and 2 (5 credits each); **PY1010** Physics for Biological and Chemical Sciences (10 credits); **MB1003** Microbiology in Society (5 credits)

ELECTIVES: **BL1005** Habitats and Ecosystems (5 credits); **BT1001** Biotechnology (5 credits; must be done in Year 1 or Year 2); **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 Molecule Biology; Introductory Physiology; Introduction to Biostatistics

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

Year 3 Modules

Structural Biochemistry; Biophysical and Biochemical Methods; Molecular Biology; Bioinformatics; Medical Microbiology; Food and Industrial Microbiology, Environmental Microbial Genomics; Genetic Engineering and Molecular Biotechnology; Immunology; Biochemical Engineering; Introduction to Pharmacology; Literature Project

Year 4 Modules

Protein Science; Biochemical Toxicity; Principles and Applications of Biotechnology; Food Biotechnology; Advanced Molecular Microbial Biotechnology; Bioprocess Engineering, Work Placement; Research Project; Case Studies in Biotechnology

