

Microbiology

CAO code: DN200 Option: Biological, Biomedical and Biomolecular Science (BBB)



Emma Cullen in a Microbiology practical in the new UCD O'Brien Centre for Science

- Learn about microbes that cause diseases, clean up environmental spills and produce antibiotics
- Understand how we engineer fungi and bacteria to produce a vast array of compounds, ranging from antibiotics and hormones to washing powder

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I am now working in a highly innovative start-up company called StableLab, where I develop rapid diagnostic solutions for the equine industry. The work is challenging, but I really enjoy it as I'm given a lot of creative freedom. Seeing a product that I've worked on making its way to market and subsequently improving the lives of horses is hugely rewarding.

Di-Sien Chan, Graduate ”

Sample pathway for a degree in Microbiology *

YEAR 1

ENGAGE WITH THE PRINCIPLES

BIOLOGY

Topics include:

- ▶ Biology in Action
- ▶ Life on Earth
- ▶ Cell Biology & Genetics
- ▶ Biomedical Sciences

CHEMISTRY

Topics include:

- ▶ The Basis of Organic and Biological Chemistry

MATHEMATICS

Topics include:

- ▶ Mathematics for the Biological & Chemical Sciences

- ▶ Two Elective modules
- ▶ One Small-Group Project

YEAR 2

CHOOSE YOUR SUBJECTS

MICROBIOLOGY

Topics include:

- ▶ Chemistry for Biologists
- ▶ Molecular Genetics and Biotechnology
- ▶ Biomolecular Laboratory Skills
- ▶ Metabolic and Immune Systems
- ▶ Principles of Microbiology: Medicine, Environment and Biotechnology

CELL & MOLECULAR BIOLOGY

Topics include:

- ▶ Biological Systems
- ▶ Principles of Cell and Molecular Biology

GENETICS

Topics include:

- ▶ Principles of Genetics

- ▶ Two Elective modules

YEAR 3

FOCUS ON YOUR CHOSEN SUBJECT

MICROBIOLOGY – Topics include:

- ▶ Regulation of Gene Expression
- ▶ Microbial Cell Factory
- ▶ Applied Microbiology
- ▶ Microbial Diversity & Growth

- ▶ Microbial Physiology
- ▶ Medical Microbiology
- ▶ Skills in Microbiology
- ▶ Ecology & Environmental Microbiology

- ▶ Two Elective modules

YEAR 4

REFINE YOUR KNOWLEDGE

MICROBIOLOGY – Topics include:

- ▶ Microbiology Research Project
- ▶ Ecological & Environmental Microbiology
- ▶ Systems Microbiology

- ▶ Foodborne Pathogens
- ▶ Microbial Pathogenicity
- ▶ Enzyme Technology & Protein Engineering

- ▶ Bioprocessing
- ▶ Natural Product Synthesis
- ▶ Host Defense Mech. In Health

BSc (Honours) Microbiology

MSc (Taught)

- ▶ MSc Biotechnology
- ▶ MSc Biotechnology & Business
- ▶ MSc Environmental Management
- ▶ MSc Toxicology & Regulatory Affairs
- ▶ MSc Plant Biology & Biotechnology
- ▶ MSc Biotherapeutics

PhD

- ▶ Students can pursue a PhD in universities in Ireland or abroad in areas as diverse as Biotechnology, Environmental Biology, Medical and Veterinary Sciences

Industry

- ▶ Pharmaceutical Companies
- ▶ Food and food-related companies
- ▶ (Veterinary) Hospitals and related laboratories
- ▶ Government agencies including the EPA and county councils

Conversion Courses

- ▶ Professional Master of Education (PME)
- ▶ Graduate Veterinary Medicine
- ▶ Graduate Medicine
- ▶ Medical Scientist
- ▶ Master of Business Administration

*See pages 4 and 5 for information on the terminology used above. Potential combinations shown here are examples only and are not guaranteed by UCD. Topics are subject to change each year.



www.ucd.ie/myucd/microbiology

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