Microbiology

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

Emma Cullen in a Microbiology practical in the 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

"I found DN200 Science fantastic because I could try out all the subjects I liked before choosing my major. I found that I adored Microbiology. I am fascinated by how microorganisms can be manipulated to make such a wide assortment of valuable products – from antibiotics and crucial hormones like insulin to bioplastics and biofuels. I love seeing how what I've learned all these years is applied in real life in industry. I am now working as a Quality Control Microbiologist in Takeda Biologics Dunboyne. Without the leadership, teamwork and communication skills I learned while studying at UCD, I would not be here today."
Caoimhe Cullen, 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

- One Elective module
- 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/Internship
- Ecological & Environmental Microbiology
- Systems Microbiology
- Foodborne Pathogens
- Microbial Pathogenicity
- Bioprocessing
- Enzyme Technology & Protein Engineering
- Natural Product Synthesis
- Host Defense Mech. In Health

BSc (Honours) Microbiology

MSc (Taught)
- MSc Biotechnology
- MSc Biotechnology & Business
- MSc Environmental Management
- MSc Regulatory Affairs & Toxicology
- 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

**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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