

# Cell & Molecular Biology

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

## Sample pathway for a degree in Cell & Molecular Biology \*

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

#### CELL & MOLECULAR BIOLOGY

Topics include:

- ▶ Biological Systems
- ▶ Principles of Cell Biology
- ▶ Principles of Genetics
- ▶ Chemistry for Biologists
- ▶ Biomolecular Laboratory Skills

#### MICROBIOLOGY

Topics include:

- ▶ Metabolic and Immune Systems
- ▶ Principles of Microbiology

#### GENETICS

Topics include:

- ▶ Principles of Genetics
- ▶ Molecular Genetics and Biotechnology

- ▶ Two Elective modules

YEAR  
3

### FOCUS ON YOUR CHOSEN SUBJECT

#### CELL & MOLECULAR BIOLOGY – Topics include:

- ▶ Advanced Cell Biology
- ▶ Research Methods in Cell Biology
- ▶ Genetics

- ▶ Regulation of Gene Expression
- ▶ Developmental Biology
- ▶ Plant Cell Growth and Signalling

- ▶ Molecular Basis of Disease
- ▶ Working with Biological Data

- ▶ Two Elective modules

YEAR  
4

### REFINE YOUR KNOWLEDGE

#### CELL & MOLECULAR BIOLOGY – Topics include:

- ▶ Membrane Trafficking
- ▶ Programmed Cell Death
- ▶ Cell Signalling

- ▶ Epithelial Transport
- ▶ Biological Imaging

- ▶ Cell Biology Research Project
- ▶ Human Genetics & Disease

### BSc (Honours) Cell & Molecular Biology

#### MSc (Taught)

- ▶ MSc Biological & Biomolecular Science (NL)
- ▶ MSc Molecular Medicine
- ▶ MSc Biotechnology
- ▶ MSc Biotechnology & Business
- ▶ MSc Plant Biology & Biotechnology

#### PhD

- ▶ Students can pursue a PhD in universities in Ireland or abroad in areas as diverse as cell & molecular biology, biochemistry, genetics, systems biology and biomolecular science

#### Industry

- ▶ Pharmaceutical and Biotechnology companies
- ▶ Semi-State bodies such as BIM, Teagasc
- ▶ Hospital laboratories
- ▶ Genetic Counselling
- ▶ Forensic Science

#### Conversion Courses

- ▶ Professional Master of Education (PME)
- ▶ Graduate Veterinary Medicine
- ▶ Graduate Medicine
- ▶ Master of Business Administration
- ▶ Master in Management

\*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.



Niamh Morgan studying mammalian cells under a fluorescence wide field microscope.

Image by Niall Hayes © UCD

- Learn why healthy cells become cancerous, what happens at a cellular level in diseases and the basic concept of genetics
- Develop practical skills in microscopy, cellular assays and diagnostic techniques used in industry, hospitals and research labs

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Upon completion of my Cell and Molecular Biology degree, I pursued a Masters in Management at University College London, with the intention to combine both to eventually manage a venture capital trust with a pharmaceutical focus. My degree has given me the necessary skills to carefully interpret and assess existing literature, problem solve, critically evaluate, and manage my time effectively.

Paula Burke, Graduate

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