

# Genetics

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

## Sample pathway for a degree in Genetics \*

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



These are transgenic zebrafish larvae (5 days old, 3mm long) that express green fluorescent protein in all their blood vessels. The zebrafish is our animal model to study retinal development and disease. Image by Dr Yolanda Alvarez © UCD

YEAR  
2

### CHOOSE YOUR SUBJECTS

#### GENETICS

Topics include:

- ▶ Chemistry for Biologists
- ▶ Molecular Genetics and Biotechnology
- ▶ Principles of Genetics
- ▶ Metabolic and Immune Systems
- ▶ Biomolecular Laboratory Skills

#### MICROBIOLOGY

Topics include:

- ▶ Principles of Microbiology: Medicine, Environment and Biotechnology

#### ZOOLOGY

Topics include:

- ▶ Biological Systems
- ▶ Principles of Zoology
- ▶ Animal Behaviour
- ▶ Evolutionary Biology

- ▶ Two Elective modules

YEAR  
3

### FOCUS ON YOUR CHOSEN SUBJECT

#### GENETICS – Topics include:

- ▶ Regulation of Gene Expression
- ▶ Bioinformatics
- ▶ Genome Structure
- ▶ Genetics

- ▶ Animal Development
- ▶ Genomics & Proteomics
- ▶ Genetic Basis of Disease
- ▶ Evolutionary Biology

- ▶ Two Elective modules

YEAR  
4

### REFINE YOUR KNOWLEDGE

#### GENETICS – Topics include:

- ▶ Genetics Disease & Behaviour
- ▶ Gene Regulation

- ▶ Systems Microbiology
- ▶ Model Organism Genetics

- ▶ Genetics Research Project

### BSc (Honours) Genetics

#### MSc (Taught)

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

#### PhD

- ▶ Students can pursue a PhD in universities in Ireland or abroad in areas as diverse as biotechnology, cell biology, biomedical and health science and bioinformatics

#### Industry

- ▶ Biotechnology, pharmaceutical, and genomics companies
- ▶ Hospital labs
- ▶ Forensic Science labs
- ▶ Agribiotech and horticulture

#### 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.

- Explore molecular genetics and molecular biology, which are core components of modern biology and medicine, and form the basis of biotechnology

“

The most valuable part of the course was the thesis project I undertook in my final year. Although this was, at times, a really challenging placement I found great satisfaction and enjoyment from optimising experiments, learning new skills and making new discoveries. I knew that this was the career path I wanted to take and I am now a PhD student in Infectious Disease at the University of Cambridge.

Amie Regan, Graduate

”

i

Dr Niamh O'Sullivan  
UCD School of Biomolecular and Biomedical Science

niamh.osullivan@ucd.ie  
+353 1 716 6762  
facebook.com/UCDSchool  
twitter.com/ucdschool



[www.ucd.ie/myucd/genetics](http://www.ucd.ie/myucd/genetics)