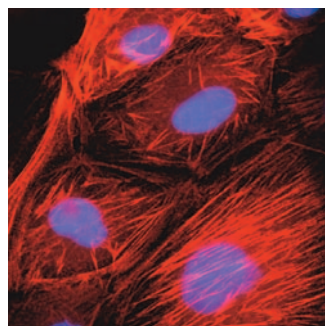


Pharmacology

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



The process of cell changes called EMT (epithelial mesenchymal transdifferentiation) that occur when kidney epithelial cells are treated with drugs. Image by Tara McMorrow and Eric Campbell © UCD

- Study how drugs work at a molecular level, what the body does to drugs and the effects of drugs on the different body systems
- Understand the actions of drugs used in the cardiovascular, respiratory, renal, endocrine and central nervous systems



The degree programme offers a wide range of modules covering the scientific background of current therapies, to identifying novel targets in diseases, and the drug development process itself. I spent a semester abroad in the University of Queensland, Australia, which was an exciting opportunity to learn from other pharmacology experts from around the world. A degree in Pharmacology offers an ideal pathway into the pharmaceutical and healthcare industry where there are a huge variety of roles from research and development all the way through to the sales and marketing of medicines.



Áine Madden, Graduate

Sample pathway for a degree in Pharmacology *

YEAR 1

ENGAGE WITH THE PRINCIPLES

BIOLOGY

Modules include:

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

CHEMISTRY

Modules include:

- ▶ The Basis of Organic and Biological Chemistry

MATHEMATICS

Modules include:

- ▶ Mathematics for the Biological & Chemical Sciences

- ▶ One Elective module
- ▶ One Small-Group Project

YEAR 2

CHOOSE YOUR SUBJECTS

The subject combinations listed below are illustrative of what a student who graduates in Pharmacology could choose in Year 2. Further subject combinations are possible depending on the choices in Year 1. Further information is available on page 19.

PHARMACOLOGY

Modules include:

- ▶ Chemistry for Biologists
- ▶ Molecular Genetics and Biotechnology
- ▶ Metabolic and Immune Systems
- ▶ Biomolecular Laboratory Skills
- ▶ Pharmacology: Biomedical Science of Drugs

PHYSIOLOGY

Modules include:

- ▶ Introduction to Physiology
- ▶ Organs and Systems Physiology

MICROBIOLOGY

Modules include:

- ▶ Microbiology in Medicine, Biotechnology and the Environment

- ▶ Two Elective modules

YEAR 3

FOCUS ON YOUR CHOSEN SUBJECT

PHARMACOLOGY – Modules include:

- ▶ Cell Signalling
- ▶ Biostatistics
- ▶ Drug action in body systems
- ▶ Chemotherapeutic agents

- ▶ Drugs used in CNS diseases
- ▶ Advanced CNS Pharmacology
- ▶ Toxicology
- ▶ Molecular Pharmacology

- ▶ Two Elective modules

YEAR 4

REFINE YOUR KNOWLEDGE

PHARMACOLOGY – Modules include:

- ▶ Pharmacology Research Project
- ▶ Advanced Neuropharmacology
- ▶ Adv. Cardiovascular Pharmacology

- ▶ Finding new Pharmaceuticals
- ▶ Adv. Pharmacology of Cancer
- ▶ Emerging Therapies
- ▶ Advanced Renal Pharmacology

- ▶ Gene Regulation
- ▶ Drug Discovery & Development

BSc (Honours) Pharmacology

MSc (Taught)

- ▶ MSc Biotechnology
- ▶ MSc Biotechnology & Business
- ▶ MSc Biotherapeutics
- ▶ MSc Regulatory Affairs & Toxicology

PhD

- ▶ Students can pursue a PhD in universities in Ireland or abroad in areas as diverse as drug development and biomedical science

Industry

- ▶ Pharmaceutical Companies
- ▶ Drug regulatory bodies such as the Irish Medicines Board
- ▶ Biotechnology sector
- ▶ Chemical safety and toxicology

Conversion Courses

- ▶ Professional Master of Education (PME)
- ▶ Graduate Veterinary Medicine
- ▶ Graduate Medicine
- ▶ Master of 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. Modules are subject to change each year.



www.ucd.ie/myucd/pharmacology



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