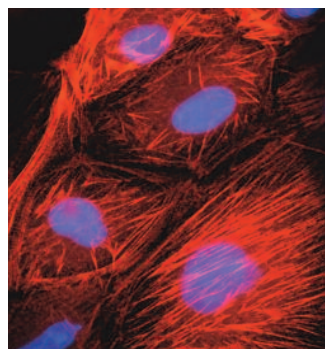


# Pharmacology

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 McMorow 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

“ My keen interest in biomedical science and healthcare led me to choose



Pharmacology at UCD. I acquired a strong scientific background during my degree, which facilitated a smooth transition into my postgraduate studies in my MSc Biotechnology & Business (UCD). I obtained an internship in a life science venture capital firm upon graduating from my MSc and was subsequently made permanent.

Jennifer McKeever, Graduate

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## Sample pathway for a degree in Pharmacology \*

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

#### PHARMACOLOGY

Topics include:

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

#### PHYSIOLOGY

Topics include:

- ▶ Introduction to Physiology
- ▶ Organs and Systems Physiology

#### MICROBIOLOGY

Topics include:

- ▶ Principles of Microbiology: Medicine, Environment and Biotechnology

- ▶ Two Elective modules

YEAR 3

### FOCUS ON YOUR CHOSEN SUBJECT

#### PHARMACOLOGY – Topics 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 – Topics include:

- ▶ Advanced Neuropharmacology
- ▶ Adv. Cardiovascular Pharmacology
- ▶ Finding new Pharmaceuticals

- ▶ Adv. Pharmacology of Cancer
- ▶ Emerging Therapies
- ▶ Advanced Renal Pharmacology
- ▶ Gene Regulation

- ▶ Drug Discovery & Development
- ▶ Pharmacology Research Project

## BSc (Honours) Pharmacology

#### MSc (Taught)

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

#### 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 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.



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

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