

Medicinal Chemistry & Chemical Biology

CAO code: DN200 Option: Chemistry & Chemical Sciences (CCS)



- Learn how to apply the tools of Chemistry to study biological systems
- Develop experience in techniques and instrumentation used in the pharmaceutical industry, e.g., the synthesis, identification and analysis of chemicals

“ DN200 allowed me to study Biomolecular & Biomedical Science subjects,



but it also enabled me to pick up Chemistry, without having studied it for the Leaving Certificate. Due to the flexibility within DN200, I was able to pursue my interests and I am now currently studying Medicinal Chemistry & Chemical Biology. The facilities in UCD are state of the art and I find it exciting being able to spend so much time in the labs, practically applying the skills I am learning every day. When I graduate, I hope to enter the pharmaceutical industry and work in drug research and development.

Amber Barry, Student

Sample pathway for a degree in Medicinal Chemistry & Chemical Biology *

YEAR 1

ENGAGE WITH THE PRINCIPLES

CHEMISTRY

Modules include:

- ▶ The Basis of Organic and Biological Chemistry
- ▶ The Basis of Physical Chemistry
- ▶ The Basis of Inorganic Chemistry
- ▶ The Molecular World

MATHEMATICS

Modules include:

- ▶ Mathematics for the Biological & Chemical Sciences

BIOLOGY

Modules include:

- ▶ Cell Biology & Genetics

- ▶ 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 Medicinal Chemistry & Chemical Biology could choose in Year 2. Further subject combinations are possible depending on the choices in Year 1. Further information is available on page 19.

MEDICINAL CHEMISTRY & CHEMICAL BIOLOGY

Modules include:

- ▶ Molecular Genetics and Biotechnology
- ▶ Principles of Biochemistry
- ▶ Medicinal Chemistry & Chemical Biology
- ▶ Pharmacology: Biomedical Science of Drugs

- ▶ Biomolecular Laboratory Skills
- ▶ Organic Chemistry
- ▶ Physical Chemistry
- ▶ Inorganic Chemistry

CHEMISTRY

Modules include:

- ▶ Students who choose Medicinal Chemistry & Chemical Biology as their main subject for Second Year also cover the requirements for Chemistry.

- ▶ Two Elective modules

YEAR 3

FOCUS ON YOUR CHOSEN SUBJECT

MEDICINAL CHEMISTRY & CHEMICAL BIOLOGY – Modules include:

- ▶ Chemical Biology of Natural Products
- ▶ Chemical Biology of Macromolecules
- ▶ Carbonyl Chemistry & Synthesis
- ▶ Medicinal Chemistry

- ▶ Structure Determination & Heterocyclic Chemistry
- ▶ Microbial Cell Factory/Chemists
- ▶ Mechanism & Stereochemistry
- ▶ Biochemist's Toolkit

- ▶ Two Elective modules

YEAR 4

REFINE YOUR KNOWLEDGE

MEDICINAL CHEMISTRY & CHEMICAL BIOLOGY – Modules include:

- ▶ Research Project
- ▶ Metals in Biology

- ▶ Methods in Organic Synthesis
- ▶ Modern Methods of Catalysis

- ▶ Special topics in Medicinal Chemistry and Chemical Biology

BSc (Honours) Medicinal Chemistry & Chemical Biology

PhD

- ▶ Students can pursue a PhD in universities in Ireland or abroad in areas as diverse as chemistry, chemical biology, medicinal chemistry, and biochemistry

Industry

- ▶ Pharmaceuticals and Biopharmaceuticals
- ▶ Cosmetics
- ▶ Food Technology
- ▶ Fine Chemicals
- ▶ Chemical Development
- ▶ Patenting
- ▶ Science-based Sales, Marketing, Finance

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.



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