In my first year I had the opportunity to study Maths, Chemistry, Physics and Biology at University level. After completing modules in Biochemistry, Neuroscience, Physiology, Pharmacology and Genetics in second year, I chose to specialise in Biochemistry & Molecular Biology. Biochemistry is at the core of all the biological sciences and provides an excellent foundation for a career in the field of biomolecular and biomedical sciences. During my degree, I have delved into key components of Biochemistry such as metabolism, molecular basis of diseases, proteins and enzymes while also being able to maintain my love of Spanish and music through the electives I have undertaken.

Alison Howett, Student

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**Sample pathway for a degree in Biochemistry & Molecular Biology**

### YEAR 1

**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

### YEAR 2

**BIOCHEMISTRY & MOLECULAR BIOLOGY**
- Topics include:
  - Principles of Biochemistry
  - Molecular Genetics and Biotechnology
  - Biomolecular Laboratory Skills
  - Metabolic and Immune Systems
  - Chemistry for Biologists

**MICROBIOLOGY**
- Topics include:
  - Principles of Microbiology
  - Research Methods for Science

**PHARMACOLOGY**
- Topics include:
  - Biomedical Science of Drugs

### YEAR 3

**FOCUS ON YOUR CHOSEN SUBJECT**

**BIOCHEMISTRY & MOLECULAR BIOLOGY**
- Topics include:
  - Metabolism and Disease
  - Biochemist’s Toolkit
  - Advanced Cell Biology
  - Cell Signalling

**REGULATION OF GENE EXPRESSION**
- Topics include:
  - Molecular Basis of Disease
  - Proteins and Enzymes
  - Genomics and Proteomics

### YEAR 4

**REFINE YOUR KNOWLEDGE**

**BIOCHEMISTRY & MOLECULAR BIOLOGY**
- Topics include:
  - Biochemistry Research Project
  - Biochemistry Career Skills
  - Advanced Neurochemistry

**ADVANCED CELL SIGNALLING**
- Topics include:
  - Advanced Cell Signalling
  - Protein Structure & Analysis

**PHD**
- Students can pursue a PhD in universities in Ireland or abroad in areas as diverse as medical research, drug development and biomedical science

**INDUSTRY**
- Pharmaceutical Companies
- Food sector
- Biotechnology sector
- Chemical Industries

**CONVERSION COURSES**
- Professional Master of Education (PME)
- Graduate Veterinary Medicine
- Graduate Medicine
- Master of Management

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*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.*