



# Welcome to UCD Science!

*An evening for parents, guardians & partners*

Professor Joe Carthy & Associate Professor Evelyn Doyle



[www.ucd.ie/science](http://www.ucd.ie/science)

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# What's new at UCD?



- UCD Science Centre - opened in September 2013 with new labs, lecture theatres and active learning classrooms
- UCD Student Centre - opened in September 2012 with pool, cinema, theatre, gym etc.
- UCD Science (DN200) is a single point of entry for 27 different degrees (including 4 Education degrees in Science and Mathematics)



# DN200 Science

In 2017 minimum CAO points were 505

BBB	Neuroscience	CCS	MPG	Applied Maths & Maths Education
Biochemistry & Molecular Biology	Pharmacology	Chemistry	Applied & Computational Mathematics	Physics
Cell & Molecular Biology	Physiology	Chemistry with Biophysical Chemistry	Financial Mathematics	Physics with Astronomy & Space Science
Environmental Biology	Plant Biology	Chemistry with Environmental & Sustainable Chemistry	Mathematics	Theoretical Physics
Genetics	Zoology	Medicinal Chemistry & Chemical Biology	Mathematical Science	Physics & Maths Education
Microbiology	Biology & Maths Education	Chemistry & Maths Education	Statistics	Geology

# Key decisions & degree pathways

- Students **choose their degree subject** (i.e. one of the 27 possibilities) **in UCD** - after they have studied it for a while
- 1<sup>st</sup> year - engage with the principles (students **don't** have to study a bit of everything). Cover at least 2 subjects.
- End of 1<sup>st</sup> year - choose 2 to 4 subjects.
- End of 2<sup>nd</sup> year - **choose their degree subject/major**
- 3<sup>rd</sup> and 4<sup>th</sup> year - focus on chosen subject.
- **Degree Pathways** summarised in brochure for all 27 subjects, including information on careers etc.



➤ Available on line [www.ucd.ie/science/ucdscience.pdf](http://www.ucd.ie/science/ucdscience.pdf)



# 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

YEAR 2

### CHOOSE YOUR SUBJECTS

#### GENETICS

Topics Include:

- Chemistry for Biologists
- Molecular Genetics and Biotechnology
- Plant and Animal 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
- Molecular Genetics and Biotechnology

- 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:

- Epigenetics
- Genetics Disease & Behaviour

- Gene Regulation
- Systems Microbiology

- Model Organism Genetics
- Genetics Research Project

### BSc (Honours) Genetics

#### MSc (Taught)

- MSc Biotechnology
- MSc Biotechnology and Business
- MSc Evolutionary Biology
- MSc Plant Biology and Biotechnology
- MSc Biotherapeutics

#### PhD

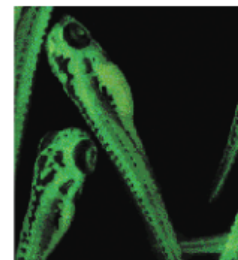
- Students can pursue a PhD in universities in Ireland or abroad in areas as diverse as biotechnology, cell biology, biomedical and health science and bioinformatics

#### 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



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

- 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.

Amle Regan, Graduate

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\*See page 43 for more information on subject choices. Potential combinations shown here are examples only and are not guaranteed by UCD. Topics are subject to change each year.



# What are the opportunities for Science graduates?

**Pharma/Biotech,  
Medical Devices,  
Hospitals,  
Chemical  
Industry**

**Energy,  
Conservation  
Wildlife &  
Environment**

**Natural  
Resources**

**Computing, Risk,  
Finance &  
Analytics**

**Semiconductor,  
Nanotech & Space  
Industry**

**Further Education  
& Research**

# "Jargon Buster"

- UCD is "**semesterised**" : each stage (year) is divided into two halves, with exams at the end of each semester. Current semester (12 lecture weeks + 1 study week + 2 exam weeks) ends on Friday December 22<sup>nd</sup>
- UCD is "**modularised**" : each stage is divided into 12 **modules**. Each module is worth 5 **credits**.
- **Core & Optional modules** : modules within Science.
- **Elective modules/UCD Horizons** : 2 modules per year in first three years from "anywhere" (e.g. Chinese, Film studies, Philosophy...or Science)

# Workload & work practice

- **Workload** includes Lectures, Tutorials, Laboratory Classes, Workshops, Small Group Activity...amounts to 40 hours per week, for the 15 weeks of a semester - it's a **full time job!**
- Most modules include **continuous assessment**.
- **Work practice** : students have a wide range of resources at their disposal, we are all here to help, but they **must take responsibility for their own learning**.
- Students must form critical judgements, challenge knowledge taken for granted, become **independent thinkers** and learn with and from other students & staff.



# Assessment & exams

- **Grades (Grade Points)** range from A+(4.2), A(4.0),...,D-(2.0), E,..., NG .
- **Grade Point Average (GPA)** : semester/stage average of Grade Points. GPA of 2.0 is a pass. GPA of 4.2 is "perfect" !
- **Degree GPA/Class** : 70% final year, 30% penultimate year
- **Resit/Repeat examinations** : Grade Point is capped at 2.0
- **Extenuating Circumstances** : illness, accident, family bereavement, serious personal issues. Application should be made when assessment & exams are affected.
- **Communication** of results, performance etc. is **only** with the student and **not** with parents/guardians/partners.

# Student supports

*we all want our students to succeed*

## Programme Office

- General enquiries on academic, registration or other queries
- Often the first port of call

## Academic Staff

- Available to discuss academic and other issues

## Student Feedback

- Module questionnaires
- Staff/Student committees

## Peer Mentors

- First years have been assigned a peer mentor who is a student in Stage 2 or 3 of the programme



# UCD Science

**Student Adviser**

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UCD Science Programme Office  
Oifig Chlár na hEolaíochta, UCD

# Time of Transition

- University environment
- Style of study
- Leaving home
- 'Emerging Adulthood': exploration and identity formation



# UCD Supports

[www.ucd.ie](http://www.ucd.ie) 'current students' 'student supports'

- UCD Access Centre
- Health Centre
- Chaplaincy
- Students' Union
- Peer Mentoring





# A Parent's Support

Diane Barth, psychologist in US Journal 'Psychology Today' suggests:

- "The most important thing you can do is try to maintain communication with your son or daughter."
- "Give advice sparingly and help them to come to their own decisions."
- Stay in regular contact



# Useful Links

**THESE SLIDES (and lots of other info) are at**  
[www.ucd.ie/science/study/currentundergraduatesciencestudents/](http://www.ucd.ie/science/study/currentundergraduatesciencestudents/)

**DEGREE PATHWAYS for ALL Science degrees**  
[www.ucd.ie/science/ucdscience.pdf](http://www.ucd.ie/science/ucdscience.pdf)

**General UCD info. on student supports**  
[www.ucd.ie/students/studentssupport.html](http://www.ucd.ie/students/studentssupport.html)

**Careers, internships & bursaries for UCD Science students**  
<http://www.ucd.ie/science/careers/>

