



UCD SCIENCE

UNDERGRADUATE COURSES

ENTRY 2026



Science

Sustainability

Actuarial &
Financial Studies

Computer Science

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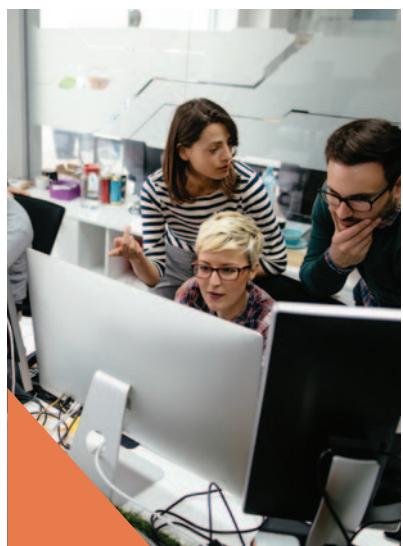
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This booklet (Version 2 Entry 2026, published on 31 October 2025) is intended to assist prospective UCD students, and the information is given in good faith. It is not, however, an official publication of the university and does not bind the university in any way. Degree programmes are subject to continuing development and the university reserves the right to make changes at any time, before or after a student's admission.

WELCOME TO UCD SCIENCE



“UCD boasts the most innovative and diverse Science programme in the country, providing knowledge in disciplines encompassing biology, chemistry, physics, earth sciences, mathematics and computer science.”

University College Dublin has a long and proud history of education, research and high achievement. Set in the heart of the beautiful Belfield campus in south Dublin, the UCD O’Brien Centre for Science provides a vibrant and state-of-the-art centre of learning, welcoming students and staff from all corners of the world.

UCD boasts the most innovative and diverse Science programme in the country, providing knowledge in disciplines encompassing biology, chemistry, physics, earth sciences, mathematics and computer science. In addition, we offer a unique programme in Sustainability combining the disciplines of Science, Social Sciences and Business. Our academic staff are expert teachers and are highly regarded world-class researchers, and indeed our research interests and strengths inform our undergraduate and postgraduate degree courses.

UCD Science graduates are in great demand in Science and Science-related jobs both in Ireland and overseas, and an undergraduate degree in science lays strong foundations for a wide variety of careers.

The choice of university and course can be a daunting one, and this is something that we recognise at UCD. In order to ensure that our university and degree courses are the right fit for your needs, we encourage all prospective students to engage with our series of events and to feel free to contact us if you have any queries. No problem is too trivial for us in this important phase of your career.

We look forward to welcoming you to UCD.

A handwritten signature in blue ink that reads "Jeremy C. Simpson". A thin blue line extends from the end of the signature towards the right.

Professor Jeremy Simpson
Dean of Science

EVENTS

NATIONAL AND INTERNATIONAL FAIRS AND EVENTS For EU and Non-EU Applicants and Offer Holders

From August 2025 Onwards	International Fairs: Meet us at a range of International events and fairs.	Worldwide Events for Entry 2026 and Entry 2027 Non-EU Applicants
8 November 2025	UCD Open Day	On-Campus Event for EU and Non-EU Applicants
June 2026	UCD Science, Sustainability, Actuarial & Financial Studies Summer School	On-Campus Event for Entry 2027 EU and Non-EU Applicants
June 2026	UCD Computer Science Summer School	On-Campus Event for Entry 2027 EU and Non-EU Applicants

WEBINAR SERIES

For EU and Non-EU Applicants and Offer Holders

January 2026	UCD Science, Sustainability, Computer Science, Actuarial & Financial Studies	Virtual Event for Entry 2026 EU and Non-EU Applicants
April 2026	UCD Science, Sustainability, Computer Science, Actuarial & Financial Studies	Virtual Event for Entry 2026 EU and Non-EU Applicants

DISCOVER SCIENCE EVENT SERIES

The Discover Science at UCD programme will be open to all students interested in our courses. It will include events in Mathematics, Physics and Biology. It involves a series of online and on-campus activities, run throughout the year. All events will be booked online and you can sign up via the myUCD website to receive an email when event bookings open. Students, parents and teachers with questions about our events can email askscience@ucd.ie.



UCD STUDENT EXPERIENCE



Dynamic Campus

The Student Centre and the UCD Sport and Fitness complex are the hub of student life on campus. The facilities include a cinema, drama theatre, debating chamber, café, and social spaces.

UCD Sport and Fitness Centre

Our modern Sport and Fitness Centre has an extensive range of amenities, catering for students of all fitness levels, from casual gym-users to Olympic athletes. Facilities include a 50-metre swimming pool, gym, dance and spinning studios, sauna and jacuzzi, sports halls, squash courts, 17 natural grass pitches, and the National Hockey Stadium.

State-of-the-Art Facilities

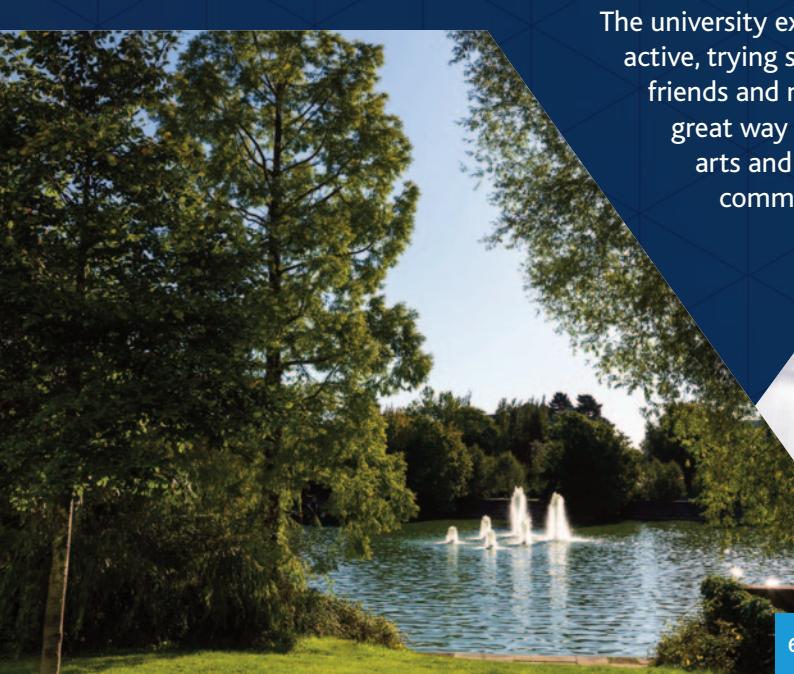
UCD Science students will learn in state-of-the-art labs, active learning environments, lecture theatres and classrooms in the UCD O'Brien Centre for Science.

Supports for UCD Students

Staff in the Science Office are always available to assist students with any problems they encounter, whether academic or personal. There is also a Student Adviser along with many other support staff whose function is to ensure that you settle into university life as quickly and easily as possible.

Societies

The university experience is all about getting involved and getting active, trying something new, having fun and making some great friends and memories along the way. UCD's student societies are a great way to explore your interests or develop new interests. From arts and culture to science and social service, you can find the community that aligns with your passion.



SAMPLE TIMETABLE

At UCD each student will have their own individual timetable based on their module selection. Students complete 60 credits per year in an undergraduate degree and for most years this involves completing 12 modules. Most modules are worth 5 credits. This includes core, option and elective modules.

All undergraduate degrees are full-time courses with classes taking place Monday to Friday from 9am to 6pm. A typical timetable in First Year will have 20-30 hours of class time per week. The classes may include lectures, practicals and tutorials, depending on the course and degree subject.

Outside of scheduled class hours, students spend time studying independently, working on assignments, meeting friends, and getting involved in clubs and societies across campus. Time between classes is often used for group study sessions, grabbing coffee with classmates, or exploring the many activities UCD has to offer.

The following is a sample Autumn Trimester timetable based on the choices of a Second Year Science student who was meeting the requirements for Microbiology and Biochemistry & Molecular Biology.

Sample Timetable*

	Monday	Tuesday	Wednesday	Thursday	Friday
9am	Tutorial				
10am		Lecture	Tutorial	Lecture	
11am	Lab				
12pm			Lecture	Lecture	Lab
1pm					
2pm	Tutorial	Lecture	Tutorial		
3pm	Lecture				
4pm		Tutorial			Lab
5pm	Tutorial				

INTERNSHIPS & CAREERS

Internships in industry or in academia are an opportunity to develop your skills and give a valuable insight into the careers available. They also provide an opportunity to build your network and learn about graduate programmes.

The UCD Careers Network provides resources and help for students interested in an internship. In addition, there are internship fairs held throughout the academic year and a number of CV clinics.

Within the UCD College of Science, there are dedicated internship managers who provide support throughout the placement process.

Applying for an internship is similar to applying for a job. It is a competitive process and is not guaranteed.

You can read more about the internships available on the relevant degree subject pages.

Plan Your Career Path

Year 1



Years 2&3



Year 4



First Year – Get Involved

- Visit the UCD Careers Network in your first year. UCD Careers Network joins the dots between your time at university and your future career.

Second and Third Year

- **Explore Your Career Options**
- Consider the elective module "Prepare for Your Career".
- Contact Internship Managers to express an interest in a placement.
- Develop a CV and cover letter.

Fourth Year

- Research job opportunities and graduate studies.
- Attend Career Fairs organised by UCD Careers Network or at GradIreland.
- Check all deadlines for PhD funding opportunities and for MSc courses.





What Internship Opportunities are available?

- The Professional Placement module worth 5 credits provides students with an opportunity to undertake a placement in industry for 6-10 weeks in the summer following Third Year in a range of disciplines in Science, Computer Science and Sustainability. Sample placements are available on each degree subject page.
- The option to complete a 6-month Industry Research Project worth 25 credits is available to students in Biochemistry & Molecular Biology, Genetics, Microbiology, Pharmacology, and Neuroscience.
- A Geoscience Work Placement module worth 5 credits is available for Earth Sciences students in the summer between Second and Third Year.
- Computer Science and Computer Science with Data Science & Artificial Intelligence students can also undertake a 5-month industry placement in Third Year worth 15 credits.
- The Actuarial & Financial Studies course has a 6-month professional placement in Third Year where students have the opportunity to work in industry.

Frequently Asked Questions

Am I guaranteed an internship if I apply for one?

A: All placements are secured on a competitive basis. Students will submit an application and attend interviews. As such, we cannot guarantee that every student who seeks an internship will succeed in securing a placement.

What help is available?

A: UCD Science has two dedicated internships managers who prepare students for the application process, which is competitive in the same way as applying for a graduate course or your first job. It is important to engage with your Internship Manager to get support with your applications and to learn about the options available to you.

Types of Companies

Over the last number of years, students have completed internships in companies including, HubSpot, Workday, SAP, SIG plc., Alexion, APC Ltd., KPMG, EY, Marine Institute, Enviroguide and many more. Examples for each discipline can be found on the relevant degree subject page.



UCD SCIENCE COURSE

The Science course offers a flexible curriculum that allows you to focus on an area from First Year or keep your options open and explore different subject areas. Subjects are grouped in streams and each stream has a set number of compulsory modules that has been kept low to allow you to try out other subjects that you may not be familiar with or to deepen your interest in the areas that you wish to pursue in Second Year and on to degree level. Plenty of advice is available during the application process and when you arrive at UCD on the module combinations to study in First Year.

Common Entry: 7 Streams, 26 Degree Subjects

Explore Multiple Streams

Biological, Biomedical & Biomolecular Sciences

Earth & Environmental Sciences

Chemistry (includes Medicinal/Sustainable)

Mathematics (includes Applied/Financial/Statistics)

Physics (includes Theoretical/Astronomy & Space Science)

Science, Mathematics & Education

Science: Explore Multiple Streams

When applying for the UCD Science course, students have the option to keep their options open in First Year by choosing Explore Multiple Streams. This gives students the option of studying the modules required for degree subjects from more than one stream in First Year.

At the end of First Year, the majority of students will pursue one or more subjects from the one stream in Second Year.

For example, you may be studying Physics and Biology in school and have an interest in both subjects. First Year of the Science course is designed to give you the flexibility to study modules for the Physics stream and the Biological, Biomedical & Biomolecular Sciences streams, for example.



First Year

- Choose the modules to keep streams open which contain your preferred subject area(s).
- The Science course has a flexible curriculum and offers introductory modules in First Year for students who may not have studied some subjects in school.



Second Year

- Study a minimum of two subject areas depending on the modules you study in First Year.
- At the end of Second Year, students submit their degree subject preferences. While we try to accommodate each student's top choice, some subjects can be competitive. As we offer a number of degree subjects in each stream, students have a number of similar degree subjects available. If a subject is oversubscribed, places are awarded on a competitive basis.



Third Year

- Focus on your degree subject.
- Some degree subjects offer opportunities to apply for internships or to study abroad.



Fourth Year

- Refine your knowledge.
- Many subjects will include a research project which you complete in your final year.

There is plenty of academic advice available about choosing modules for students during orientation.

BSc Biochemistry & Molecular Biology

In this degree subject, you will explore life at the molecular level. Students will develop practical skills in protein and DNA isolation and analysis; molecular biology techniques used in the pharmaceutical and biotechnology industries; and clinical tests such as immunoassays used in hospital laboratories.

What Will I Study?*

Biochemistry & Molecular Biology is offered through the Biological, Biomedical & Biomolecular Sciences stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Biochemistry & Molecular Biology student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Biomedical Sciences
- The Basis of Organic and Biological Chemistry
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Metabolism and Disease
- Biochemist's Toolkit
- Advanced Cell Biology
- Cell Signalling
- Regulation of Gene Expression
- Molecular Basis of Disease
- Proteins and Enzymes
- Genomics and Proteomics

YEAR 2

- Biochemistry in Action
- Molecular Genetics and Biotechnology
- Biomolecular Laboratory Skills
- Biomolecular Sciences
- Chemistry for Biologists

YEAR 4

- Biochemistry Research Project
- Biochemistry Career Skills
- Advanced Neurochemistry
- Advanced Cell Signalling
- Biochemical Research Strategies
- Protein Structure and Analysis

**Modules are subject to change each year and are not guaranteed by UCD.*

Career & Further Study Opportunities

Graduates can pursue a career in areas such as pharmaceutical companies, biotechnology companies, forensic science laboratories, hospital and clinical laboratories, and food and beverage companies. Graduates are eligible to apply for a range of Masters programmes in Ireland and abroad, in areas such as biotechnology, biotherapeutics imaging and microscopy, and molecular medicine. Graduates can also pursue a PhD in universities in Ireland and abroad in areas such as medical research, drug development and biomedical science.



Graduate Testimonial



Sorcha

I chose to pursue a degree in Biochemistry & Molecular Biology because I have always had a passion for science. It has enabled me to study chemistry in a practical and fascinating way through focusing on the chemical processes that occur within living organisms. During my time at UCD, I have had the opportunity to build strong relationships with my peers and become class representative for my course. The elective modules offered within this degree have helped me explore my interest in coding alongside biochemistry, allowing me to obtain the structured elective Introduction to Computer Science. I was drawn to UCD because of my desire to experience university life. As one of the largest urban campuses in Europe, with all amenities in one place, including a free student gym and beautiful parkland trails, it brought a sense of community and safety that I hadn't experienced anywhere else before.

Internship Opportunities

Students have an opportunity to undertake an industry research placement for 6 months commencing in the Summer following third year (i.e. June-December). Assessment is based on a thesis, oral presentations and a laboratory report.

Students in recent years have completed internships in companies such as MSD or in placements in hospital labs.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Biological, Biomedical & Biomolecular Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie



BSc Cell & Molecular Biology

Cell & Molecular Biology is the study of cells and the molecules (DNA, RNA, proteins, lipids and carbohydrates) that combine to form them. The skills you learn will equip you to tackle important global challenges, such as understanding the molecular basis of diseases and innovating novel therapeutic approaches to combat them.

What Will I Study?*

Cell & Molecular Biology is offered through the Biological, Biomedical & Biomolecular Sciences stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Cell & Molecular Biology student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Biomedical Sciences
- The Basis of Organic and Biological Chemistry
- Mathematics for the Biological and Chemical Sciences
- Life Sciences in Space

YEAR 2

- Scientific Communication
- Principles of Cell and Molecular Biology
- Chemistry for Biologists
- Biomolecular Laboratory Skills

YEAR 3

- Advanced Cell Biology
- Hot Topics in Cell and Molecular Biology
- Genetics
- Regulation of Gene Expression
- Developmental Biology
- Cell Biology of Disease
- Plant Cell Biology

YEAR 4

- Cell Biology Research Project
- Programmed Cell Death
- Cell Signalling
- The RNA World
- Biological Imaging
- Human Genetics and Disease

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Graduates can pursue a career in areas such as pharmaceutical and biotechnology industries, biomedical research, hospital and university laboratories, forensic science laboratories, and genetic counselling.

Graduates are eligible to apply for a range of MSc programmes in Biotechnology, Biotechnology with Business, Biotherapeutics, or apply for PhD programmes in cell signalling, membrane biology or genetics, in Ireland and abroad.



Graduate Testimonial



Georgie

I am from Wisconsin, USA and came to UCD as the common entry course allowed me to explore my love of Science. With regular events and over a hundred clubs and societies, UCD has a thriving community. You will run into friendly faces no matter where you are on campus. I have recently graduated from Cell & Molecular Biology. In my final year, I wrote my thesis on urea protein transporters in a brain with Alzheimer's Disease to characterise the disease pathology; a perfect example of how Cell & Molecular Biology delivers students with an extensive number of opportunities to undertake exciting research. I am currently a clinical laboratory scientist at a molecular diagnostics company based in the US. My primary duty is to detect if patient samples contain biomolecular markers of early colorectal cancer.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students in recent years have completed internships in the Royal College of Surgeons Ireland. Students have also completed research placements in UCD labs.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Biological, Biomedical & Biomolecular Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie



BSc Environmental Biology

Environmental Biology focuses on the biological aspects of environmental science. It equips students with a strong background in ecology and its application to environmental assessment and management. You will also develop practical skills in field-based sampling of plants and animals in their natural environments in Ireland and Spain.

What Will I Study?*

Environmental Biology is offered through the Biological, Biomedical & Biomolecular Sciences or Earth & Environmental Sciences streams of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive. This outlines sample modules for an Environmental Biology student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Biomedical Sciences
- The Basis of Organic and Biological Chemistry
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Systems Ecology
- Biogeography and Field Biology
- Diversity of Vertebrates
- Diversity of Plant Form and Function
- Ecological and Environmental Microbiology
- Wildlife and Fisheries Management

YEAR 2

- Principles of Environmental Biology and Ecology
- Scientific Communication
- Evolutionary Biology
- Climate Change and Agriculture
- Forests, Climate and Carbon

YEAR 4

- Environmental Biology Research Project
- Marine Community Ecology
- Biological Invasions
- Ecological Modelling and QGIS
- Foodborne Pathogens

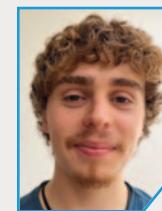
*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Environmental Biology graduates can pursue a wide range of careers such as fisheries managers, environmental consultants, habitat ecologists, pollution biologists, wildlife and conservation officers, national park supervisors, technical and scientific officers, and university researchers and professors. MSc programmes that can be pursued by graduates include Applied Environmental Science, World Heritage Management, Environmental Sustainability and Global Change: Ecosystem Science and Policy. Graduates can pursue a PhD in universities in Ireland or abroad in areas such as ecology, microbiology, fisheries, conservation biology, environmental management and global change.



Graduate Testimonial



Aaron

Environmental Biology was an exciting undergraduate course to choose as it promised to blend my passion for biology, plants, animals and the environment with the opportunity to work inside and outside of the laboratory. I particularly enjoyed the various field courses provided by this degree. These excursions gave me the chance to implement the knowledge I had accumulated from lectures, getting hands-on experience in field sampling design, data collection and data analysis. These exceptional trips occurred across a wide variety of freshwater, terrestrial and marine habitats, examining a broad range of species, from plant mosses to mammals! This degree has inspired and empowered me to pursue a career in ecology, and I am currently looking forward to beginning a wildlife ecology research masters programme in UCD.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students in recent years have completed internships in Teagasc or in research labs in UCD.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Biological, Biomedical & Biomolecular Sciences Stream

Or

Science: Earth & Environmental Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie



BSc Genetics

Genetics is the scientific study of heredity – how information is passed from one generation to the next. You will study developing new areas, such as personal genomics, which uses DNA sequence to determine health and ancestry.

What Will I Study?*

Genetics is offered through the Biological, Biomedical & Biomolecular Sciences stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive. This outlines sample modules for a Genetics student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Biomedical Sciences
- The Basis of Organic and Biological Chemistry
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Regulation of Gene Expression
- Bioinformatics
- Genome Structure
- Genetics
- Animal and Plant Development
- Genomics and Proteomics

YEAR 2

- Chemistry for Biologists
- Molecular Genetics and Biotechnology
- Principles of Genetics
- Biomolecular Sciences
- Biomolecular Laboratory Skills

YEAR 4

- Genetics Research Project
- Genetics Disease and Behaviour
- Gene Regulation
- Systems Microbiology
- Model Organism Genetics

**Modules are subject to change each year and are not guaranteed by UCD.*

Career & Further Study Opportunities

Genetics graduates can pursue careers in hospital laboratories, biotechnology, pharmaceutical and genomics companies, forensic science laboratories, agribiotech and horticulture companies, and food and drink companies. Graduates can pursue MSc courses in the areas such as Biotechnology, Biotechnology & Business and Biotherapeutics. Graduates can pursue a PhD in universities in Ireland or abroad in areas as diverse biotechnology, cell biology, biomedical and health science and bioinformatics.

Graduate Testimonial



Grace

I have had a lifelong passion for science, so choosing to study Science at UCD was the perfect choice for me. Genetics was by far my favourite subject because it is such a fundamental area of study for all of biology. Modules offered to you in Genetics range from studying microbial genetics, evolution and phylogenetics, human genetics and disease, and my personal favourite, plant genetics. Another aspect of this course that was very appealing to me is that you can do a mix of "wet lab" practical work, and bioinformatics, so you develop a wide range of up-to-date skills for further research or industry work. I am now pursuing a PhD in plant genetics in UCD, and I use the skills and knowledge I obtained from my undergraduate degree every day.

Internship Opportunities

Students have an opportunity to undertake an industry research placement for 6 months commencing in the Summer following third year (i.e. June-December). Assessment is based on a thesis, oral presentations and a laboratory report.

Students in recent years have completed internships in Teagasc and the European Molecular Biology Laboratory.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Biological, Biomedical & Biomolecular Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



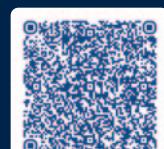
EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie



BSc Microbiology

Microbiology is the study of microscopic organisms known as micro-organisms or microbes.

Microbes play a key role in every facet of life on this planet.

What Will I Study?*

Microbiology is offered through the Biological, Biomedical & Biomolecular Sciences stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Microbiology student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide

YEAR 1

- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Biomedical Sciences
- The Basis of Organic and Biological Chemistry
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Regulation of Gene Expression
- Microbial Cell Factory
- Applied Microbiology
- Microbial Diversity and Growth
- Microbial Physiology
- Medical Microbiology

YEAR 2

- Chemistry for Biologists
- Molecular Genetics and Biotechnology
- Biomolecular Laboratory Skills
- Biomolecular Sciences
- Microbiology in Medicine, Biotechnology and the Environment

YEAR 4

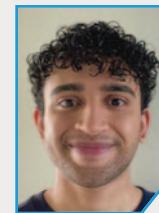
- Microbiology Research Project/Internship
- Ecological and Environmental Microbiology
- Systems Microbiology
- Foodborne Pathogens
- Microbial Pathogenicity
- Bioprocessing
- Enzyme Technology and Protein Engineering

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Microbiology graduates can pursue careers in the healthcare, pharmaceutical and food-related industries, hospitals and veterinary hospitals and related laboratories. They may also find work in government agencies such as the Environmental Protection Agency where they are involved in research and development, process design and control, management and quality control. Graduates can pursue taught masters such as MSc Biotechnology, MSc Biotechnology & Business, MSc Environmental Management, MSc Regulatory Affairs & Toxicology, MSc Plant Biology & Biotechnology and MSc Biotherapeutics. Graduates can pursue a PhD in universities in Ireland or abroad in areas as diverse as biotechnology, environmental biology, medical and veterinary sciences.

Graduate Testimonial



Jaffer

After my first Microbiology class, I was absolutely enthralled. I knew straight away that was what I wanted to do. Microbiology is such a vast and expanding field and has a little bit of everything in there and I could not be happier that I chose it. I had the opportunity in my final year to carry out a research project, supervised by some of UCD's best scientists, on bioplastic producing bacteria and it was the highlight of my degree. It was a great way to put all the lab skills and techniques I had learned into practice and produce actual research. After I graduated, I started an MSc in Biotechnology and Business and am I looking forward to working in the biotechnology industry.

Internship Opportunities

Students have an opportunity to undertake an industry research placement for 6 months commencing in the Summer following third year (i.e. June-December). Assessment is based on a thesis, oral presentations and a laboratory report.

Students in recent years have completed internships in Department of Agriculture Food and Marine, APC Ltd, and Sanofi.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Biological, Biomedical & Biomolecular Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie

BSc Neuroscience

Neuroscience is the study of the nervous system, directed towards understanding how cells within the nervous system interact with each other to form the brain and regulate body functions, human behaviour, memory, emotions and consciousness.

What Will I Study?*

Neuroscience is offered through the Biological, Biomedical & Biomolecular Sciences stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive. This outlines sample modules for a Neuroscience student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Biomedical Sciences
- The Basis of Organic and Biological Chemistry
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Receptor-Mediated Cell Signalling
- Pharmacology of Neurodegenerative and Psychiatric Illness
- Nervous System Development
- Membrane Biology
- Data Modelling for Science
- Sensory Neuroscience
- Development and Advanced Pharmacology of the Nervous System

YEAR 2

- Chemistry for Biologists
- Molecular Genetics and Biotechnology
- Biomolecular Laboratory Skills
- Biomolecular Sciences
- Principles of Neuroscience

YEAR 4

- Neuroscience Research Project
- Synaptic Plasticity
- Advanced Topics in Neural Development
- Advanced Neuropharmacology
- Advanced Neurochemistry
- Molecular Neuroimmunology

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Neuroscience graduates can pursue careers in the biotechnology and pharmaceutical industry, medical research, drug development and clinical trials; hospital and university laboratories, Neuroscience research institutes, and government agencies. Graduates can pursue taught masters such as MSc Biotechnology, MSc Biotechnology & Business, MSc Biotherapeutics or MSc Biotherapeutics & Business. Graduates can pursue a PhD in universities in Ireland or abroad in Neuroscience or in areas as diverse as biotechnology, cell biology, biomedical and health science.



Graduate Testimonial



Jodie

UCD Science allowed me tailor my degree to encompass all the aspects of science I needed in order to succeed while keeping me intrigued and excited along the way. In third year, I was lucky to partake in the Erasmus Programme at the University of Nottingham, which gave me a different insight into the scope of neuroscience and the opportunities it presents. UCD offers multiple opportunities to travel and learn. This highlights their dedication to offering the best possible education and to encourage us to develop as a person. In addition, I had the absolute privilege of doing a 6-month thesis project in The Max Planck Institute for Brain Research, which allowed me to work as a real scientist in a lab, something I see myself doing in the future.

Internship Opportunities

Students have an opportunity to undertake an industry research placement for 6 months commencing in the Summer following third year (i.e. June-December). Assessment is based on a thesis, oral presentations and a laboratory report.

Students in recent years have completed internships at the Max Planck Institute, Ulysses Neuroscience and MSD.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Biological, Biomedical & Biomolecular Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie

BSc Pharmacology

Pharmacology is the scientific study of drugs and their action on biological systems, ranging from genes and cells up to tissues and even human populations.

What Will I Study?*

Pharmacology is offered through the Biological, Biomedical & Biomolecular Sciences stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Pharmacology student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Biomedical Sciences
- The Basis of Organic and Biological Chemistry
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Receptor-Mediated Cell Signalling
- Data Modelling for Science
- Endocrine, Renal and Reproductive Pharmacology
- Chemotherapeutic agents
- Pharmacology of Neurodegenerative and Psychiatric Illness
- Development and Advanced Pharmacology of the Nervous System

YEAR 2

- Chemistry for Biologists
- Molecular Genetics and Biotechnology
- Biomolecular Sciences
- Biomolecular Laboratory Skills
- Pharmacology: Biomedical Science of Drugs

YEAR 4

- Pharmacology Research Project
- Advanced Neuropharmacology
- Advanced Cardiovascular Pharmacology
- Drug Discovery and Development
- Advanced Cancer Biology and Pharmacology
- Emerging Therapies
- Advanced Renal Pharmacology

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Pharmacology graduates can pursue careers in pharmaceutical companies, drug regulatory bodies such as the Health Products Regulatory Authority, the biotechnology sector, chemical safety and toxicology. Graduates can pursue taught masters such as MSc Biotechnology, MSc Biotechnology & Business, MSc Regulatory Affairs & Toxicology, and MSc Biotherapeutics. Graduates can pursue a PhD in diverse aspects of Pharmacology and Biomedical Science.

Graduate Testimonial



Fatima

Pharmacology is a prominent and distinguished discipline in the realm of biomedical research, offering an interactive and practical field of study. Neuropharmacology and the drug development pipeline are two key disciplines that have always fascinated me, and as part of my final year research project, I had the opportunity to conduct my own research in epilepsy, as well as pursue an internship at Conway Institute in third year within the same area. After I graduated, I pursued an MSc Biotechnology & Business, furthering my interest in the business side of pharmaceuticals. I hope to work in clinical trials involving neurodegenerative and neuropsychiatric disorders in the near future.

Internship Opportunities

Students have an opportunity to undertake an industry research placement for 6 months commencing in the Summer following third year (i.e. June-December). Assessment is based on a thesis, oral presentations and a laboratory report.

Students in recent years have completed internships in Teva Pharmaceuticals, Pfizer and Alexion.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Biological, Biomedical & Biomolecular Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie

BSc Physiology

Physiology is an area of biology related to how the human body works. Physiologists are interested in how the cells and organs of the body operate and how their incredible array of processes co-operate to enable our bodies to function under normal and challenging circumstances.

What Will I Study?*

Physiology is offered through the Biological, Biomedical & Biomolecular Sciences stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive. This outlines sample modules for a Physiology student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Biomedical Sciences
- The Basis of Organic and Biological Chemistry
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Cardiovascular Physiology
- Respiratory Physiology
- Digestion, Absorption and Excretion
- The Brain and Motor Control
- Endocrine/Reproductive Physiology
- Experimental Physiology
- Biostatistics
- Immunophysiology

YEAR 2

- Chemistry for Biologists
- Molecular Genetics and Biotechnology
- Biomolecular Laboratory Skills
- Introduction to Physiology: Cells and Tissues
- Organs and Systems Physiology

YEAR 4

- Fundamentals of Physiological Research
- Physiology Journal Club
- Adaptation to Hypoxia
- Brain Disorders
- Physiological Genomics
- The Physiology of Disease
- Physiology Research Project
- Exercise Physiology

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Physiology graduates pursue careers in areas such as biomedical research in the university system or other government run operations, pharmaceutical industry based research and development, clinical trials, and pharmaceutical industry sales. Students can pursue a Taught Masters or Research Masters in universities in Ireland or abroad in any physiology discipline or a diverse range of medical, healthcare or other biological areas. Graduates can pursue a PhD in universities in Ireland or abroad in any physiological discipline or a diverse range of medical or other biological areas.

Graduate Testimonial



Celine

I am so glad I chose Physiology, as the level of academic teaching was outstanding and I loved learning how various systems of the body worked. My final year project was based on the inflammatory responses of spinal cord injury. Following my graduation, I worked in the National Virus Reference Laboratory. I am now studying for a PhD at the University of Otago in New Zealand, focusing on signalling pathways of oestrogens in the brain. UCD offered a whirlwind of opportunities, which allowed me to flourish. I was a Student Ambassador, Peer Mentor and served on committees like An Cumann Gaelach. I also spent two summers in Tanzania with UCD Volunteers Overseas.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third Year.

Students have also completed research projects as part of the UCD School of Medicine Student Summer Research Awards competition.

How to Apply

Science: Biological, Biomedical & Biomolecular Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie

BSc Plant Biology

Plant Biology is the scientific study of plants, fungi and algae. Plants are vital for supporting and maintaining the atmospheric and environmental conditions required for all life on earth.

What Will I Study?*

Plant Biology is offered through the Biological, Biomedical & Biomolecular Sciences stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Plant Biology student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Biomedical Sciences
- The Basis of Organic and Biological Chemistry
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Plant Diseases
- Plant Form and Function
- Plant Biotechnology and Entrepreneurship
- Experimental Plant Physiology
- Plant Cell Biology
- Working with Biological Data

YEAR 2

- Chemistry for Biologists
- Scientific Communication
- Principles of Plant Biology
- Biomolecular Lab Skills
- Principles of Cell and Molecular Biology

YEAR 4

- Plant Biology Research Project
- Biology and Ecology of Coastal Wetlands
- Environmental Impact Assessment
- Developmental Plant Genetics
- Cell Signalling in Plants
- Plant Biology Field Course
- Plant Phenotyping

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Plant Biology graduates have obtained positions as plant and environmental scientists, pollution biologists, molecular geneticists and cell biologists, agronomists, horticulturists, foresters, park rangers, environmental consultants and heritage officers. Graduates can pursue taught masters such as MSc Applied Environmental Science, MSc World Heritage Management and MSc Plant Biology & Biotechnology. Graduates can pursue a PhD in universities in Ireland or abroad in areas as diverse as climate change, marine biology or cell and molecular biology.



Graduate Testimonial



Caroline

Placing UCD Science at the top of my CAO was an easy choice as I could explore all subject areas before making an informed decision on my degree. To me, no area holds greater merit for study than plant science. Its implications infiltrate all aspects of modern society from global food security to phytopharmaceuticals. I was Vice-Auditor of the UCD Biological Society. Being involved in a society allowed me to meet other people from various stages and degrees in UCD, as well as encounter some incredible scientists. The UCD O'Brien Centre for Science is home to unparalleled plant science labs and teaching facilities including the Bloom gold medal-winning UCD Evolution Garden, which are invaluable resources as I now pursue my PhD in plant genetics in UCD.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students have also completed research placements in UCD labs.

How to Apply

Science: Biological, Biomedical & Biomolecular Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie

BSc Zoology

Zoology is often thought of in terms of treks into the wild to study rare and endangered species. However, this is only one facet of this fascinating subject. Modern zoology deals with all aspects of animals, from genetics and cell biology to ecology and animal behaviour.

What Will I Study?*

Zoology is offered through the Biological, Biomedical & Biomolecular Sciences stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive. This outlines sample modules for a Zoology student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Biomedical Sciences
- The Basis of Organic and Biological Chemistry
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Systems Ecology
- Working with Biological Data
- Diversity of Vertebrates
- Evolutionary Biology
- Functional Morphology
- Arthropoda

YEAR 2

- Principles of Zoology
- Scientific Communication
- Animal Behaviour
- Molecular Genetics and Biotechnology
- Chemistry for Biologists

YEAR 4

- Zoology Research Project
- Biological Invasions
- Marine Community Ecology
- Molecular Phylogenetics
- Epithelial Transport in Animal Physiology

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Zoology graduates can pursue careers in a variety of industries and state organisations such as National Parks & Wildlife Service, National Museum, Marine Institute, semi-state bodies such as the Environmental Protection Agency, Bord lascaigh Mhara and Inland Fisheries Ireland, conservation bodies, aquaculture, universities, secondary schools, environmental consultancies, and several areas of biotechnology. Graduates can pursue taught masters such as MSc Applied Environmental Science, MSc World Heritage Management and MSc Biological & Biomolecular Science. Graduates can pursue a PhD in universities in Ireland or abroad in areas as diverse as evolution and population biology and cell and molecular biology.

Graduate Testimonial



Katie

I chose Zoology as the lecturers were so helpful and engaging, and there were plenty of opportunities to get hands-on experience at home and abroad. What I've enjoyed most are the small class sizes, as you can avail of more one-on-one conversations with lecturers, as well as the field trips where you can really apply your learning in the field. While in UCD I was heavily involved in societies, both with the Science Society and with many of the performing societies such as Musical Soc, Dance Soc and Dram Soc. Engaging with clubs and societies alongside my studies was one of the best decisions I've ever made, and I've made lifelong friends and memories in the process.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year. Students in recent years have completed internships in Dublin Zoo, Emerald Park, and Seal Rescue Ireland. Students have also completed research placements in UCD labs. Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Biological, Biomedical & Biomolecular Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie



www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie

BSc Earth Sciences

Earth Sciences are all about our planet and how it works: at no time has this been more important. The Earth System profoundly impacts many aspects of society, and its understanding is critical to developing solutions for current global challenges, including climate change, energy, access to clean water and protection from natural disasters.

What Will I Study?*

Earth Sciences is offered through the Earth & Environmental Sciences stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for an Earth Sciences student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Introduction to Earth Sciences
- Understanding Earth Systems
- Field Geology
- Earth, Environment and Society
- Earth and Humanity
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Geological Structures
- Sedimentary Environments
- Low-Temperature Geochemistry
- Digital Geology and GIS
- Earth Systems Analysis
- Invertebrate Palaeontology and Stratigraphy

YEAR 2

- Earth Materials and Processes
- Dynamic Earth
- Field Geology and Mapwork
- Global Environmental Change
- Geoscience for Sustainability

YEAR 4

- Earth Science Research Project - Igneous and Ore Geology - Advanced Geological Mapping - Quaternary Geology - Applied Geophysics - Geological Fieldwork - Marine Geoscience - Igneous Petrology
- Metamorphism and Earth Evolution

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Earth Sciences graduates work in organisations essential to understanding and protecting the environment including national geological surveys, NGOs, onshore and offshore geotechnical companies, environmental consultancies, and insurance firms managing natural disaster risk. They are also employed in companies in the natural resources sector as mineral exploration or production geologists, geophysicists, hydrogeologists, environmental geochemists, geospatial analysts, and marine surveyors. Graduates can pursue the MSc Subsurface Geomodelling in UCD or qualify for other taught masters in Ireland, the UK and elsewhere on topics including hydrogeology, engineering geology, mineral exploration, remote sensing and GIS or environmental science. Graduates can pursue a PhD in universities in Ireland or abroad in areas as diverse as mineral and raw materials exploration, volcanic and earthquake hazards, palaeobiology, environmental geochemistry, geophysics, and climate science.

Graduate Testimonial



Grace

Earth Sciences is such a diverse and exciting field of study. The creation and destruction of the Earth beneath our feet, strange creatures preserved in rock and ancient catastrophic events are among a few of the things I find fascinating about it. I am now working as a project coordinator in the Offshore Wind Industry. Working in an industry that is constantly taking strides towards a greener future for Ireland is so exciting.

Internship Opportunities

Students have an opportunity to complete a Geoscience Work Placement worth 5 credits in industry (6-10 weeks) in the summer following second year. Assessment is based on student and employer reports. Work placements are secured on a competitive basis and are typically hosted by resource-based, geotechnical, civil engineering and environmental consultancy companies. Earth Sciences students also complete residential field training at the end of the summer vacation prior to their fourth year, followed by an independent, usually field-based, research project during September and October, providing them with key technical and transferable skills needed in numerous geoscientific careers. Several core modules involve 5 to 8 day residential field classes in Ireland, Britain and Spain.

How to Apply

Science: Earth & Environmental Sciences Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie

BSc Chemistry

All materials and living things consist of atoms that are linked together in many different ways in molecules. Chemistry is a study of these molecules, how they form and react. You will also develop skills in modern synthesis and analysis techniques used in the pharmaceutical and chemistry industries.

What Will I Study?*

Chemistry is offered through the Chemistry stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Chemistry student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- The Basis of Organic and Biological Chemistry
- The Basis of Physical Chemistry
- The Molecular World
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Quantum Mechanics
- Carbonyl Chemistry and Synthesis
- Chemical Kinetics
- Mechanism and Stereochemistry
- Instrumental Analysis
- Organometallic and Solid State Chemistry

YEAR 2

- The Basis of Inorganic Chemistry
- Organic Chemistry
- Physical Chemistry
- Inorganic Chemistry

YEAR 4

- Chemistry Research Project
- Methods in Organic Synthesis
- Chemical Thermodynamics
- Electrochemistry
- Reactivity and Change
- Nanochemistry
- Advanced Inorganic Chemistry

**Modules are subject to change each year and are not guaranteed by UCD.*

Career & Further Study Opportunities

The pharmaceutical industry is one of the largest in Ireland, and UCD Chemistry graduates work in a variety of roles. This includes analytical roles in laboratories on the testing and analysis of active pharmaceutical ingredients, medicines, and medical devices. Some graduates pursue research chemist roles in laboratories in research and development. Management and supervisory roles are also an option in regulatory affairs, production and validation. The semiconductor, medical device and energy industries also hire a significant number of materials chemists, and graduates would be involved in semiconductor processing, effluent and raw materials monitoring, and air and water quality measurements. Chemistry graduates also pursue PhDs in Ireland or abroad in areas as diverse as total synthesis of natural products, biological aspects of nanoscience, novel material synthesis, energy generation, synthetic organic chemistry, methodology development and polymer chemistry.



Graduate Testimonial



Sarah

What I enjoyed most about my studies was the teaching environment. The professors were actively involved in research in the fields they taught. Their enthusiasm made even the most complex topics easier to understand. The science study rooms were great spaces to work through assignments and exam prep alongside friends, which really helped me stay motivated. The social side of the course was amazing too. With so many students, it was easy to find your people, and the combination of big lectures and small tutorials helped build real connections.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students in recent years have completed internships in IRLCA, Boston Scientific, APC Ltd and in hospital placements.

Students can also apply for research placements in UCD labs.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Chemistry Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie



BSc Chemistry with Environmental & Sustainable Chemistry

As part of your studies, you will learn the basis of 'Green Chemistry' and what happens, at a molecular level, when chemicals interact with the environment. You will also discover techniques to produce energy and commodity chemicals sustainably.

What Will I Study?*

Chemistry with Environmental & Sustainable Chemistry is offered through the Chemistry stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Chemistry with Environmental & Sustainable Chemistry student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- The Basis of Organic and Biological Chemistry
- The Basis of Physical Chemistry
- The Molecular World
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Quantum Mechanics
- Carbonyl Chemistry and Synthesis
- Self-Assembly of Biomolecules
- Mechanism and Stereochemistry
- Instrumental Analysis
- Organometallic and Solid State Chemistry

YEAR 2

- Environmental and Sustainable Chemistry
- Inorganic Chemistry
- Physical Chemistry
- Environmental Geology

YEAR 4

- Environmental or Sustainable Chemistry Research Project
- Green and Sustainable Chemistry
- Methods in Organic Synthesis
- Sustainable Development Chemistry
- Nanochemistry

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Apart from the disciplines that are available to graduates with a BSc in Chemistry, graduates in Chemistry with Environmental & Sustainable Chemistry will be particularly suited to employment in the environmental and emerging energy industries, including commercial environmental analysis, alternative energy industry, Environmental Protection Agency, ESB and Bord Gáis.

Graduates can also pursue a range of MSc or PhD opportunities in Ireland or abroad.

Student Testimonial



James

I have always been passionate about STEM, and UCD gave me the opportunity to explore many areas of interest with excellent facilities and support. I chose to study this course because it integrates biology and physics in a way that elegantly explains the world around us. The laboratory sessions have been the most enjoyable part of my studies, allowing me to build practical skills, collaborate with peers, and learn from experts. I'm especially interested in how chemistry can address global challenges like climate change. After graduation, I hope to pursue a PhD and contribute to Ireland's sustainability and EU 2050 climate goals.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students in recent years have completed internships in the Environmental Protection Agency and Colas Bitumen Emulsions East.

Students can also apply for research placements in UCD labs.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Chemistry Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie



BSc Medicinal Chemistry & Chemical Biology

As part of your studies, you will learn how to apply the tools of Chemistry to study biological systems. You will also develop experience in techniques and instrumentation used in the pharmaceutical industry, e.g., the synthesis, identification and analysis of chemicals.

What Will I Study?*

Medicinal Chemistry & Chemical Biology is offered through the Chemistry stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive. This outlines sample modules for a Medicinal Chemistry & Chemical Biology student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- The Basis of Organic and Biological Chemistry
- The Basis of Physical Chemistry
- The Molecular World
- Cell Biology and Genetics
- Mathematics for the Biological and Chemical Sciences

YEAR 3

- Chemical Biology of Natural Products
- Chemical Biology of Macromolecules
- Carbonyl Chemistry and Synthesis
- Medicinal Chemistry
- Structure Determination and Heterocyclic Chemistry
- Microbial Cell Factory for Chemists

YEAR 2

- Molecular Genetics and Biotechnology
- Principles of Biochemistry
- Medicinal Chemistry and Chemical Biology
- Pharmacology: Biomedical Science of Drugs
- Biomolecular Laboratory Skills
- Organic Chemistry

YEAR 4

- Research Project
- Metals in Biology
- Methods in Organic Synthesis
- Modern Methods of Catalysis
- Special Topics in Medicinal Chemistry and Chemical Biology

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Graduates of the Medicinal Chemistry & Chemical Biology degree will be equipped with the skills to pursue a career in Pharmaceuticals and Food technology companies, cosmetic technology companies, fine chemical and chemical development and patenting. Graduates can also pursue a PhD in Ireland or abroad in areas such as chemistry, chemical biology or medicinal chemistry.



Student Testimonial



Meng-Jan

I chose Medicinal Chemistry & Chemical Biology because I have always been fascinated by the intersection of chemistry and biology, and how the knowledge of chemical compounds and reactions can be used to improve human health. One of the things I enjoy most about my studies is the hands-on laboratory work. I find it incredibly satisfying to conduct experiments and see the results first-hand. After I graduate, I hope to pursue a career in the pharmaceutical industry where I can use my knowledge and skills to contribute to the development of new and effective medications. Long-term, I would like to participate in the development and research of new drugs and therapies.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students in recent years have completed internships in Henkel and APC Ltd.

Students can also apply for research placements in UCD labs.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Chemistry Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie



BSc Applied & Computational Mathematics

As part of your studies, you will discover how Applied and Computational Mathematics is fundamental in providing uniquely powerful ways to describe, analyse and advance the physical and life sciences, engineering, technology, business and finance.

What Will I Study?*

Applied & Computational Mathematics is offered through the Mathematics stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for an Applied & Computational Mathematics student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Introduction to Applied and Computational Mathematics
- Applications of Differential Equations
- Linear Algebra
- Calculus in the Mathematical and Physical Sciences
- Mathematical Analysis

YEAR 3

- Mathematical Biology
- Dynamical Systems
- Complex Analysis
- Partial Differential Equations
- Advanced Mathematical Methods
- Mathematical Fluid Dynamics I
- Advanced Computational Science

YEAR 2

- Computational Science
- Vector Calculus
- Oscillations and Waves
- Classical Mechanics

YEAR 4

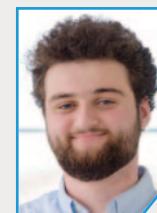
- Research Project
- Weather and Climate
- General Relativity and Gravitational Waves
- General Relativity and Black Holes
- Electrodynamics and Gauge Theory
- Mathematics of Sustainability and the Environment
- Optimisation Algorithms
- Mathematics of Machine Learning

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Graduates with training in Applied & Computational Mathematics work in fields as diverse as analytics and forecasting, meteorology, energy systems, electronics, biomedical applications and bio-information, finance, pharmaceutical industry, environmental agencies and companies, and computing in business, technology, research, and academia.

Graduate Testimonial



PJ

After my first Applied & Computational Mathematics class, I knew it was the right choice for me. The chance to study the mechanics and structure of Mathematics and learn how to apply it to not just Physics and Computer Science but to a wide range of other fields was thrilling. That, along with my time spent as a class representative, was so rewarding; getting to organise events, trips and hoodies for my class. As well as this, UCD Science gave me the opportunity to spend a trimester studying abroad in California, broadening my perspective and giving me a more varied education. My time at UCD left me well prepared for a Masters at the University of Cambridge.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students in recent years have completed internships in Met Éireann.

Students can also apply for a UCD research placement.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Mathematics Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



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EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie

BSc Financial Mathematics

As part of your studies, you will develop strong mathematical, problem-solving and analytical skills used in banking and finance. You will also learn the mathematical theories that underpin financial models, as well as computational expertise in the algorithms used to price financial products.

What Will I Study?*

Financial Mathematics is offered through the Mathematics stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Financial Mathematics student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Calculus in the Mathematical and Physical Sciences
- Linear Algebra in the Mathematical and Physical Sciences
- Numbers and Functions
- Mathematical Analysis
- Statistical Modelling
- Applications of Differential Equations

YEAR 3

- Partial Differential Equations for Financial Mathematics
- Metric Spaces
- Fundamentals of Actuarial and Financial Mathematics
- Corporate Finance
- Statistical Machine Learning
- Advanced Computational Finance

YEAR 2

- Calculus of Several Variables
- Linear Algebra 2
- Theory of Games
- Foundations in Finance

YEAR 4

- Measure Theory and Integration
- Probability Theory
- Financial and Actuarial Mathematics
- Investment and Trading
- Advanced Risk Management

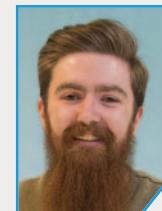
*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Graduates with training in Financial Mathematics work in fields as diverse as quantitative positions in international financial companies, risk modelling in banking and insurance, computing in business, technology, research, and academia.

Graduates can also pursue a range of MSc or PhD programmes such as the MSc Actuarial Science, MSc Financial Mathematics or MSc Statistical Data Science.

Graduate Testimonial



Joseph

When I came to the UCD Open Day and saw the beautiful science building and how friendly everyone was, my mind was made up right away.

When I learned about Financial Mathematics, it sounded like the perfect way to continue to study mathematics while also combining it with my interest in financial markets. I was also lucky enough to get to go abroad for my third year to UC Berkeley in California, which was an amazing experience. Studying at a different institution gave me another perspective and I think it's really helped me in my final year. I also completed an internship in the summer between third and fourth year at Credit Suisse and was able to earn credits as part of the professional placement module. After graduating, I went back to work at the same firm full time.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students in recent years have completed internships in Grant Thornton, AIB, Murex, Mazars, JP Morgan, IMC Trading and Citibank.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Mathematics Stream

Or

Science: Explore Multiple Streams

 EU Applicants: cao.ie

 Non-EU Applicants: ucd.ie/apply



EU Enquiries

 askscience@ucd.ie

 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

 internationalenquiries@ucd.ie



BSc Mathematics

As part of your studies, you will discover the power and beauty of the universal language of Mathematics. You will also explore its applications and its deep influence on the physical and social sciences, technology, data analysis, philosophy and more.

What Will I Study?*

Mathematics is offered through the Mathematics stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Mathematics student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Applied Mathematics: Mechanics and Methods
- Calculus in the Mathematical and Physical Sciences
- Numbers and Functions
- Linear Algebra in the Mathematical and Physical Sciences
- Mathematical Analysis
- Applications of Differential Equations

YEAR 3

- Advanced Linear Algebra
- Metric Spaces
- Further Groups and Rings
- Measure Theory and Integration
- Functions of One Complex Variable
- Topology

YEAR 2

- Linear Algebra 2
- Calculus of Several Variables
- Groups, Rings and Fields

YEAR 4

- Final Year Project
- Differential Geometry
- Functional Analysis
- Probability Theory
- Algebraic Geometry
- Galois Theory
- Number Theory

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Each year sees new applications of sophisticated mathematical models and procedures in insurance and actuarial services, data analytics, the stock market, banking and industry. Employers in all of these areas seek mathematics graduates for their critical thinking and problem-solving skills. Our recent graduates are working in many diverse areas, including actuarial science, banking and financial services, civil service, coding and cryptography companies, IT industry, meteorology and research. Opportunities for further study include MSc and PhD programmes in the mathematical sciences in Ireland and abroad, leading to research positions in universities or industry.



Graduate Testimonial



Ellen

I decided to study at UCD due to its beautiful campus, unparalleled facilities, and the ability to tailor my degree to what interested me most.

My favourite part of studying Mathematics is learning to look at a complicated logical problem and slowly teasing out the solution through different approaches. The variety in assessment of projects, assignments and exams helped ensure I understood topics in theory and practice. Being involved in the Literary & Historical society and the Women+ in STEM society has helped me meet an incredible group of friends and has aided me in developing a wide variety of extracurricular skills.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students in recent years have completed internships in DIAS, Deloitte and AIB.

Students can also apply to complete Undergraduate Summer Research Projects in the UCD School of Mathematics and Statistics in the summer after third year.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Mathematics Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie

BSc Statistics & Data Science

As part of your studies you will learn statistical methods and acquire key skills in computing and data analysis that are crucial for transforming data into actionable knowledge. These are essential in various data-related industries, including healthcare, finance, and the government sector.

What Will I Study?*

Statistics & Data Science is offered through the Mathematics stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Statistics & Data Science student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Statistical Modelling
- Calculus in the Mathematical and Physical Sciences
- Linear Algebra in the Mathematical and Physical Sciences
- Mathematical Analysis
- Numbers and Functions
- Applications of Differential Equations

YEAR 3

- Statistical Machine Learning
- Advanced Predictive Analytics
- Introduction to Bayesian Analysis
- Data Programming with Python
- Time Series
- Stochastic Models

YEAR 2

- Introduction to Probability
- Inferential Statistics
- Data Programming with R
- Modern Regression Analysis

YEAR 4

- Statistics and Data Science Research Project
- Monte Carlo Inference
- Bayesian Data Analysis
- Actuarial Statistics
- Machine Learning and AI
- Survival Models

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

A degree in Statistics & Data Science equips you with the expertise to unlock insights from complex data and drive critical decision-making across a wide range of sectors. Graduates are highly sought after in industries such as healthcare, business, biosciences, finance, climate science, economics, sports analytics, education, and government. Our graduates are well-prepared to enter the workforce and make a significant impact in their chosen careers. A degree in statistics also opens doors to graduate studies in both taught and research programmes. Many of our graduates pursue advanced degrees, which further deepen their knowledge and expertise in the field, providing numerous opportunities for career advancement.



Graduate Testimonial



Emer

I decided to study at UCD as I have always loved Mathematics and knew I wanted to study it in college. UCD gave me the flexibility to see what type of Maths subject I enjoyed the most before deciding to major in Statistics. I love getting to see Mathematics applied to real-world data and establishing patterns and reasonings behind different outcomes. I was also Secretary of the Trampoline Club, which I joined back in first year and have made some of my closest friends through the club! In my summer of third year, I completed an internship in data analytics and after I graduated, I started work as a data analyst.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students in recent years have completed internships in KPMG, PwC, EY and American Express.

Students can also apply to complete Undergraduate Summer Research Projects in the UCD School of Mathematics and Statistics in the summer after third year.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Science: Mathematics Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

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www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie

BSc Physics

As part of your studies, you will learn how to investigate the physical world from the outermost reaches of the universe to the innermost parts of the atom. You will also develop skills in how to interpret the physical world, carry out experiments and compare results critically with predictions from theory.

What Will I Study?*

Physics is offered through the Physics stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Physics student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Foundations of Physics
- Frontiers of Physics
- Thermal Physics and Materials
- Quanta, Particles and Relativity
- Calculus in the Mathematical and Physical Sciences
- Linear Algebra in the Mathematical and Physical Sciences

YEAR 3

- Classical Mechanics and Relativity
- Optics and Lasers
- Electromagnetism
- Advanced Laboratory
- Nuclear Physics
- Quantum Mechanics

YEAR 2

- Electronics and Devices
- Introductory Quantum Mechanics
- Fields, Waves and Light
- Methods for Physicists
- Thermodynamics and Statistical Physics

YEAR 4

- Advanced Laboratory
- Applied Quantum Mechanics
- Applied Optics
- General Relativity and Cosmology
- High Energy Particle Physics
- Computational Biophysics
- Theoretical Astrophysics

**Modules are subject to change each year and are not guaranteed by UCD.*

Career & Further Study Opportunities

Physics at UCD is an Institute of Physics accredited degree, and graduates are well positioned to pursue careers in areas such as energy technology, medical physics, meteorology, advanced materials (e.g. semiconductor industry), geoscience, ICT and financial industries, and semi-state bodies such as the EPA's Office of Radiological Protection. Graduates are also eligible to apply for MSc programmes in Nanobio Science, Space Science & Technology, Nanotechnology, Medical Physics or Meteorology, or for PhD programmes in Ireland and abroad in diverse areas such as Radiation Physics, Physics of Advanced Materials, Atomic Physics, Particle Physics and Astrophysics.

Graduate Testimonial



Eimear

I really fell in love with Physics after being able to apply what I learned in the classroom first-hand in the lab at UCD. This interest was boosted by two opportunities to undertake internships during my degree. After second year, I worked closely with UCD School of Physics staff to write programs to solve equations describing white dwarf and neutron stars. Then, in third year, I travelled to the University of Notre Dame in the United States to study radioactive materials' impact on the environment.

Inspired by these internships, I began a PhD in particle physics. I am currently based at CERN in Switzerland, helping to run the ATLAS experiment at the Large Hadron Collider and to analyse the particle collisions it records.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year. Placements are secured on a competitive basis and are subject to change each year.



How to Apply

Science: Physics Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie



BSc Physics with Astronomy & Space Science

As part of your studies, you will develop practical skills by making astronomical observations using a variety of telescopes.

What Will I Study?*

Physics with Astronomy & Space Science is offered through the Physics stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Physics with Astronomy & Space Science student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Foundations of Physics
- Frontiers of Physics
- Astronomy and Space Science
- Thermal Physics and Materials
- Quanta, Particles and Relativity
- Calculus in the Mathematical and Physical Sciences

YEAR 3

- Classical Mechanics and Relativity
- Stellar Astrophysics and Astronomical Techniques
- Optics and Lasers
- Physics with Astronomy and Space Science Lab
- Quantum Mechanics

YEAR 2

- Electronics and Devices
- Introductory Quantum Mechanics
- Fields, Waves and Light
- Exploring the Solar System
- Methods for Physicists

YEAR 4

- Physics with Astronomy and Space Science Lab
- Galaxies, Observational Cosmology and the Interstellar Medium
- Astronomy Field Trip to Spain
- Theoretical Astrophysics
- General Relativity and Cosmology
- Applied Quantum Mechanics

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Physics with Astronomy & Space Science at UCD is an Institute of Physics accredited degree, which positions graduates to go into the rapidly growing space sector. There are opportunities for well-qualified graduates to work with major space agencies, such as ESA and NASA, or with space companies. Graduates are also qualified to go into areas such as medical physics, meteorology, semiconductor technology, energy, ICT and finance. Graduates may apply for MSc programmes such as Space Science & Technology. They may also pursue research through PhD programmes in Ireland and abroad in many fields of physics.

Student Testimonial



Javier

I chose to study at UCD because of its strong international reputation and the flexibility it offers. That freedom helped me confirm my passion for Physics with Astronomy and Space Science—a subject I've been drawn to since childhood, fascinated by the moon and night sky. In secondary school, I discovered I enjoyed problem-solving and critical thinking, which made physics a natural fit. One of my favourite aspects of the course is the laboratory work. It's hands-on, engaging, and a great way to apply theoretical knowledge in a practical setting. I'm also involved in the Physics Society, which has been a fantastic way to connect with classmates and take part in events, including a trip to ESA's Operations Centre in Germany. After Third Year, I will complete a research studentship at the UCD School of Physics, analysing data from the Very Large Telescope (VLT) on star formation. The biggest benefit is gaining first-hand research experience, helping clarify whether a future in academia or industry is the right path for me.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year. Placements are secured on a competitive basis and are subject to change each year.



How to Apply

Science: Physics Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



BSc Theoretical Physics

As part of your studies, you will learn to understand and predict the behaviour of physical systems ranging from subatomic to astronomical scales using advanced mathematics.

What Will I Study?*

Theoretical Physics is offered through the Physics stream of the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. While we aim to accommodate student preferences, places can be competitive.

This outlines sample modules for a Theoretical Physics student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the UCD Science Stage 1 Guide.

YEAR 1

- Foundations of Physics
- Frontiers of Physics
- Thermal Physics and Materials
- Quanta, Particles and Relativity
- Calculus in the Mathematical and Physical Sciences
- Linear Algebra in the Mathematical and Physical Sciences

YEAR 3

- Analytical Mechanics
- Partial Differential Equations
- Electromagnetism
- Foundations of Fluid Mechanics
- Quantum Mechanics
- Functions of One Complex Variable

YEAR 2

- Electronics and Devices
- Introductory Quantum Mechanics
- Fields, Waves and Light
- Methods for Physicists
- Calculus of Several Variables

YEAR 4

- Theoretical Physics Project
- Applied Quantum Mechanics
- Advanced Mathematical Methods
- High Energy Particle Physics
- Nuclear Physics
- General Relativity and Cosmology
- Computational Biophysics

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Theoretical Physics graduates can choose to develop careers in a variety of sectors including academic and government research institutions, energy technologies, information and communication technology, advanced materials [e.g. semiconductor industry], management consulting, stock market and financial risk analysis, climate change and environmental impact analysis, and second and third-level education.

Our Theoretical Physics degree is an accredited Physics degree and graduates are well prepared for further research and have successfully completed PhDs in MIT, Caltech, Harvard, Princeton and Cambridge, as well as in UCD.

Graduate Testimonial



Claudia

I chose to study at UCD because of the flexibility of the science course, it gave me the chance to explore a range of subjects before committing to a specific degree subject. However, it was during an Open Day visit with my parents that my decision became clear. I fell in love with the green campus, the vibrant student life, and the wide range of societies and opportunities beyond academics.

I chose Theoretical Physics because it allows me to explore the fundamental laws that govern nature in a precise and deterministic way. I especially enjoy lectures where we apply core concepts to real-world problems, from modelling traffic flow to analysing stellar nuclear reactions. But what I value most is the strong sense of community within my class. There's something really rewarding about the support and focus of problem-solving sessions, and the shared joy of celebrating after each exam.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year. Placements are secured on a competitive basis and are subject to change each year.



How to Apply

Science: Physics Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie



BSc Applied Mathematics, Mathematics & Education

MSc Mathematics & Science Education

If you are interested in Applied Mathematics and Mathematics and think you might like to teach these subjects at post-primary level, then this degree subject may be for you. It is designed so that you study mathematics, applied mathematics and education in an integrated manner. Throughout the course you will gain teaching experience through structured educational placements.

What Will I Study?*

Applied Mathematics, Mathematics & Education is offered through the Science, Mathematics & Education stream in the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. Students interested in Science, Mathematics & Education degree subjects also have the choice to pursue the modules required for degree subjects in other streams within the common entry Science course. Students study their degree subject in third and fourth year which leads directly to a one-year MSc in Mathematics and Science Education.

This outlines sample modules for an Applied Mathematics, Mathematics & Education student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the Stage 1 Guide.

YEAR 1

- Mathematics and Science Education and Communication
- Applied Mathematics: Mechanics and Methods
- Applications of Differential Equations
- Linear Algebra
- Numbers and Functions
- Calculus

YEAR 3

- Schools and Society

YEAR 4

- Pedagogical Approaches to Mathematics and Science
- Psychology for Teaching and Learning

YEAR 5

- Research Methods
- Professional Dissertation
- Year-Long Placement in Post Primary School
- Continuous Professional Development

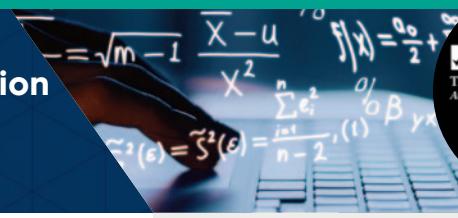
YEAR 2

- Key Ideas in Education
- Science and Mathematics Pedagogy

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

After graduating with their BSc, students proceed to the MSc in Mathematics & Science Education. The complete five-year course is fully accredited by the Teaching Council of Ireland with graduates qualified to teach Applied Mathematics and Mathematics to Leaving Certificate level. You can pursue other options after your BSc. For example, some of our students have progressed to PhD research or to the working environment.



Graduate Testimonial



Deeba

I chose UCD Science because I knew I wanted to study Mathematics. I was set on studying pure mathematics but after completing a module on mathematics education, I realised that while I have a love for mathematics, I have a passion for mathematics education and communication. The great thing about this degree is that there are a lot of options available after graduating.

School Placements

In first and second year, you will get a taste of what it might be like to be a teacher, with short structured placements in Mathematics and Science education modules. In third year, you will participate in Peer-Assisted Tutoring, tutoring first year undergraduate students and gaining insights into key aspects of learning in the transition from post-primary to third level education. In third year, you will also participate in a post-primary school placement in STEM over one term.

In fourth and fifth year, you will participate in a year-long school placement, with all undergraduate placements organised by the UCD School of Mathematics and Statistics. There are opportunities for paid summer internships with STEM companies in the summers after third, fourth and fifth year.

How to Apply

Science: Science, Mathematics & Education Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie

BSc Biology, Mathematics & Education

MSc Mathematics & Science Education

If you are interested in Biology and Mathematics, and think you might like to teach these subjects at post-primary level, then this degree subject may be for you. It is designed so that you study mathematics, biology and education in an integrated manner. Throughout the course you will gain teaching experience through structured educational placements.

What Will I Study?*

Biology, Mathematics & Education is offered through the Science, Mathematics & Education stream in the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. Students interested in Science, Mathematics & Education degree subjects also have the choice to pursue the modules required for degree subjects in other streams within the common entry Science course. Students study their degree subject in third and fourth year which leads directly to a one-year MSc in Mathematics and Science Education. This outlines sample modules for a Biology, Mathematics, Mathematics & Education student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the Stage 1 Guide.

YEAR 1

- Mathematics and Science Education and Communication
- Biology in Action
- Life on Earth
- Cell Biology and Genetics
- Linear Algebra
- Calculus

YEAR 3

- Teaching Second-Level Science
- Schools and Society

YEAR 4

- Pedagogical Approaches to Mathematics and Science
- Psychology for Teaching and Learning

YEAR 2

- Key Ideas in Education
- Science and Mathematics Pedagogy

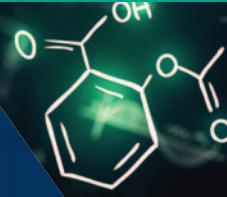
YEAR 5

- Research Methods
- Professional Dissertation
- Year-Long Placement in Post Primary School
- Continuous Professional Development

**Modules are subject to change each year and are not guaranteed by UCD.*

Career & Further Study Opportunities

After graduating with their BSc, students proceed to the MSc in Mathematics & Science Education. The complete five-year course is fully accredited by the Teaching Council of Ireland with graduates qualified to teach Biology and Mathematics to Leaving Certificate level. You can pursue other options after your BSc. For example, some of our students have progressed to PhD research or to the working environment.



Graduate Testimonial



Ciara

Motivated by a deep interest in people, pedagogical practices, and the intricacies of mathematical learning, I finalised my subject selection in Biology, Mathematics, and Education. This choice offered an all-encompassing STEM education experience, where the theoretical knowledge acquired during lectures served as the bedrock for implementing effective teaching methodologies. This pathway includes two-year-long placements, and these significantly contributed to the development of my identity as a Mathematics and Science educator.

School Placements

In first and second year, you will get a taste of what it might be like to be a teacher, with short structured placements in Mathematics and Science education modules. In third year, you will participate in Peer-Assisted Tutoring, tutoring first year undergraduate students and gaining insights into key aspects of learning in the transition from post-primary to third level education. In third year, you will also participate in a post-primary school placement in STEM over one term.

In fourth and fifth year, you will participate in a year-long school placement, with all undergraduate placements organised by the UCD School of Mathematics and Statistics. There are opportunities for paid summer internships with STEM companies in the summers after third, fourth and fifth year.

How to Apply

Science: Science, Mathematics & Education Stream

Or

Science: Explore Multiple Streams

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie



BSc Chemistry, Mathematics & Education

MSc Mathematics & Science Education

If you are interested in Chemistry and Mathematics, and think you might like to teach these subjects at post-primary level, then this degree subject may be for you. It is designed so that you study mathematics, chemistry and education in an integrated manner.

What Will I Study?*

Chemistry, Mathematics & Education is offered through the Science, Mathematics & Education stream in the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. Students interested in Science, Mathematics & Education degree subjects also have the choice to pursue the modules required for degree subjects in other streams within the common entry Science course. Students study their degree subject in third and fourth year which leads directly to a one-year MSc in Mathematics and Science Education. This outlines sample modules for a Chemistry, Mathematics, Mathematics & Education student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the Stage 1 Guide.

YEAR 1

- Mathematics and Science Education and Communication
- Introductory Chemistry
- Organic Chemistry and Chemical Biology
- Linear Algebra
- Calculus
- Statistical Modelling

YEAR 3

- Teaching Second-Level Science
- Schools and Society

YEAR 4

- Pedagogical Approaches to Mathematics and Science
- Psychology for Teaching and Learning

YEAR 2

- Key Ideas in Education
- Science and Mathematics Pedagogy

YEAR 5

- Research Methods
- Professional Dissertation
- Year-Long Placement in Post Primary School
- Continuous Professional Development

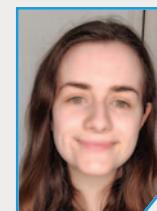
*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

After graduating with their BSc, students proceed to the MSc in Mathematics & Science Education. The complete five-year course is fully accredited by the Teaching Council of Ireland with graduates qualified to teach Chemistry and Mathematics to Leaving Certificate level. You can pursue other options after your BSc. For example, some of our students have progressed to PhD research or to the working environment.



Graduate Testimonial



Aisling

I was attracted to UCD for two reasons: the broad Science course and the incredibly active clubs and societies. The course coordinators care about your teacher training greatly, providing school placements in Years 3 and 4, and helping you to become an effective teacher. It is deeply rewarding and satisfying to help young people.

School Placements

A key feature of the suite of Science, Mathematics and Education degrees are the professional work placements throughout the course.

In first and second year, you will get a taste of what it might be like to be a teacher, with short structured placements in Mathematics and Science education modules. In third year, you will participate in Peer-Assisted Tutoring, tutoring first year undergraduate students and gaining insights into key aspects of learning in the transition from post-primary to third level education. In third year, you will also participate in a post-primary school placement in STEM over one term.

In fourth and fifth year, you will participate in a year-long school placement, with all undergraduate placements organised by the UCD School of Mathematics and Statistics. There are opportunities for paid summer internships with STEM companies in the summers after third, fourth and fifth year.

How to Apply

Science: Science, Mathematics & Education Stream

Or

Science: Explore Multiple Streams

✉ EU Applicants: cao.ie

🌐 Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie

BSc Computer Science, Mathematics & Education

MSc Mathematics & Science Education

log₂(x) ≈ log₂(1 + 1/x)

If you are interested in Mathematics and Computer Science, and think you might like to teach these subjects at post-primary level, then this degree subject may be for you. It is designed so that you study mathematics, computer science and education in an integrated manner.

What Will I Study?*

Computer Science, Mathematics & Education is offered through the Science, Mathematics & Education stream in the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. Students interested in Science, Mathematics & Education degree subjects also have the choice to pursue the modules required for degree subjects in other streams within the common entry Science course. Students study their degree subject in third and fourth year which leads directly to a one-year MSc in Mathematics and Science Education.

This outlines sample modules for a Computer Science, Mathematics, Mathematics & Education student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the Stage 1 Guide.

YEAR 1

- Calculus in the Mathematical and Physical Sciences
- Principles of Scientific Enquiry
- Applications of Differential Equations
- Introduction to Programming II
- Linear Algebra in the Mathematical and Physical Sciences
- Mathematics and Science Education and Communication
- Statistical Modelling

YEAR 2

- Key Ideas in Education
- Science and Mathematics Pedagogy

YEAR 3

- Teaching Second-Level Science
- Schools and Society

YEAR 4

- Pedagogical Approaches to Mathematics and Science
- Psychology for Teaching and Learning

YEAR 5

- Research Methods
- Professional Dissertation
- Year-Long Placement in Post Primary School
- Continuous Professional Development

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

After graduating with their BSc, students proceed to the MSc in Mathematics & Science Education. The complete five-year course is fully accredited by the Teaching Council of Ireland with graduates qualified to teach Computer Science and Mathematics to Leaving Certificate level. You can pursue other options after your BSc. For example, some of our students have progressed to PhD research or to the working environment.



EU Enquiries

- ✉ askscience@ucd.ie
- 💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

- ✉ internationalenquiries@ucd.ie



Graduate Testimonial



Conor

I was attracted to this course for the blend of Mathematics and Computer Science that it offers, as well as the social aspects of school placements and learning how to teach. I particularly like the sense of community and the supportive environment in the programme's education modules. The lecturers genuinely care about students' learning and know all their students by their first names.

School Placements

In first and second year, you will get a taste of what it might be like to be a teacher, with short structured placements in Mathematics and Science education modules. In third year, you will participate in Peer-Assisted Tutoring, tutoring first year undergraduate students and gaining insights into key aspects of learning in the transition from post-primary to third level education. In third year, you will also participate in a post-primary school placement in STEM over one term.

In fourth and fifth year, you will participate in a year-long school placement, with all undergraduate placements organised by the UCD School of Mathematics and Statistics. There are opportunities for paid summer internships with STEM companies in the summers after third, fourth and fifth year.

How to Apply

Science: Science, Mathematics & Education Stream

Or

Science: Explore Multiple Streams

🌐 EU Applicants: cao.ie

🌐 Non-EU Applicants: ucd.ie/apply

BSc Physics, Mathematics & Education

MSc Mathematics & Science Education

If you are interested in Physics and Mathematics, and think you might like to teach these subjects at post-primary level, then this degree subject may be for you. It is designed so that you study physics, mathematics and education in an integrated manner.

What Will I Study?*

Physics, Mathematics & Education is offered through the Science, Mathematics & Education stream in the common entry Science course. After meeting the requirements for their preferred stream(s) in First Year and studying at least two subjects in Second Year, students submit their degree subject preferences. Students interested in Science, Mathematics & Education degree subjects also have the choice to pursue the modules required for degree subjects in other streams within the common entry Science course. Students study their degree subject in third and fourth year which leads directly to a one-year MSc in Mathematics and Science Education. This outlines sample modules for a Physics, Mathematics, Mathematics & Education student at UCD. Students may also select option and elective modules throughout their degree. More information about the modules available can be found in the Stage 1 Guide.

YEAR 1

- Mathematics and Science Education and Communication
- Foundations of Physics
- Frontiers of Physics
- Linear Algebra
- Calculus
- Applications of Differential Equations

YEAR 3

- Teaching Second-Level Science
- Schools and Society

YEAR 4

- Psychology for Teaching and Learning
- Pedagogical Approaches to Mathematics and Science

YEAR 2

- Key Ideas in Education
- Science and Mathematics Pedagogy

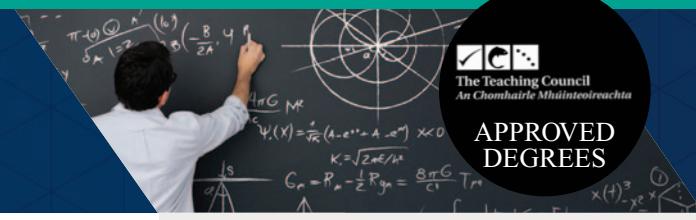
YEAR 5

- Research Methods
- Professional Dissertation
- Year-Long Placement in Post Primary School
- Continuous Professional Development

*Modules are subject to change each year and are not guaranteed by UCD.

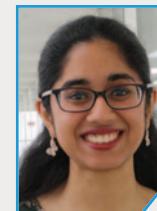
Career & Further Study Opportunities

After graduating with their BSc, students proceed to the MSc in Mathematics & Science Education. The complete five-year course is fully accredited by the Teaching Council of Ireland with graduates qualified to teach Physics and Mathematics to Leaving Certificate level. You can pursue other options after your BSc. For example, some of our students have progressed to PhD research or to the working environment.




The Teaching Council
An Chomhairle Muainteoireachta
APPROVED DEGREES

Student Testimonial



Hanna

I had trouble choosing the right course because I had so many interests; maths and physics, essay writing, public speaking, and children's development. The structure of the course was also extremely appealing with plenty of time to think about our decisions. In UCD, I am currently part of the leadership committee for Draw Society, and I highly recommend everyone to get involved in clubs and societies.

School Placements

In first and second year, you will get a taste of what it might be like to be a teacher, with short structured placements in Mathematics and Science education modules. In third year, you will participate in Peer-Assisted Tutoring, tutoring first year undergraduate students and gaining insights into key aspects of learning in the transition from post-primary to third level education. In third year, you will also participate in a post-primary school placement in STEM over one term.

In fourth and fifth year, you will participate in a year-long school placement, with all undergraduate placements organised by the UCD School of Mathematics and Statistics. There are opportunities for paid summer internships with STEM companies in the summers after third, fourth and fifth year.

How to Apply

Science: Science, Mathematics & Education Stream

Or

Science: Explore Multiple Streams

- ✉ EU Applicants: cao.ie
- 🌐 Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie



SUSTAINABILITY



Sustainability is a unique 4-year multidisciplinary course that combines the economic, environmental and social dimensions of sustainability, enabling specialisation in one of those dimensions complemented by knowledge and skills from the others. First year is structured so that students can progress into their preferred degree option in second year.

Degree Subjects

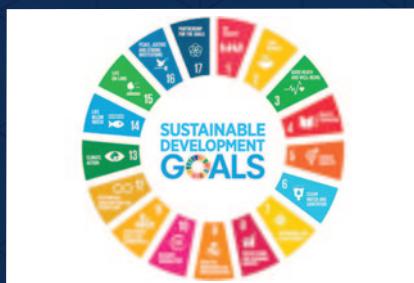
- Sustainability with Environmental Sciences
- Sustainability with Social Sciences, Policy & Law

- Sustainability with Business & Economics



Global Perspective on Sustainability

Core modules provide a global perspective on sustainability and include interdisciplinary research, a professional placement, field work in Ireland and Europe and engagement with leading researchers, advocates and practitioners.



4 Year
Honours
BSc

Unique
Multidisciplinary
Course



The UCD BSc Sustainability course has now been approved as an Institute of Environmental Management and Assessment (IEEMA) University Partner for 2024/2025.

Careers in Sustainability

Graduates will enjoy careers as consultants, managers and advisers in large organisations and private businesses. An interdisciplinary education in sustainability theory, policy and practice will equip you to work in areas such as renewables, clean technology management and energy efficiency, or advise industries on social and environmental strategies. Many opportunities also exist in organisations such as the UN, the European Environment Agency and the European Commission, and others.

BSc Sustainability with Environmental Sciences

Across the four years of this degree subject, you will develop interdisciplinary skills and knowledge on sustainability, spanning its environmental, societal and economic aspects. In this degree subject, there is a particular focus on science and technology to understand and address climate change and the degradation of our natural environment.

What Will I Study?*

Sustainability with Environmental Sciences is one of the degree subjects available through the common entry Sustainability course. Students study a common first year for the three Sustainability degree subjects and at the end of first year, choose their degree major. Assuming students meet all the academic requirements, students are guaranteed their degree major, which they study in second, third and fourth year.

This outlines sample modules for a Sustainability with Environmental Sciences student at UCD. Students may also select option and elective modules throughout their degree.

YEAR 1

- Introduction to Sustainability
- Sustainability Challenges
- Scientific Enquiry
- Statistics
- Cell Biology and Genetics
- Life on Earth

YEAR 3

- Sustainability in Action (field trip)
- Working with Biological Data
- Wildlife Conservation and Fisheries Management
- Life Cycle Assessment
- Sustainable Chemistry
- Waste Management

YEAR 2

- Sustainability: Research Tools
- Communication in Sustainability
- Principles of Environmental Biology and Ecology
- Earth, Environment and Society
- Global Environmental Change

YEAR 4

- Environmental Assessment
- Advanced Air Pollution
- Environmental Geoscience
- Marine Community Ecology
- The Urban Environment
- Renewable Energy Systems and Analysis
- Ecological Modelling

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

An interdisciplinary education in Sustainability theory, policy and practice will equip you to work in areas such as renewables, clean technology management and energy efficiency, or advise industries on social and environmental strategies. Many opportunities also exist in international organisations such as the UN, the European Environment Agency and the European Commission, government departments and state agencies such as the Environmental Protection Agency and the National Parks and Wildlife Service and in local authorities and Non-Governmental Organisations.

Student Testimonial



Rachel

The strong emphasis on the science and technology behind climate change and environmental degradation has helped me better understand the complex challenges our planet faces. I've valued the flexibility to explore modules across science, engineering, and agriculture, allowing me to tailor my interests. Whether focusing on environmental biology, climate science, or sustainable energy solutions, the course provides the tools and knowledge needed to create real change. Beyond academic content, I've developed critical thinking, teamwork, and problem-solving skills that will be invaluable in any future role related to this course.

Internship Opportunities

Students have the opportunity to complete a Professional Placement which provides an opportunity to undertake a placement in industry (6-12 weeks) in the summer following third year. Students have completed internships in ESB, Altemar, Wind Energy Ireland and Environmental Consultants. Placements are secured on a competitive basis and are subject to change.

How to Apply

Sustainability

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



V2.0 2026

EU Enquiries

 askscience@ucd.ie

 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

 internationalenquiries@ucd.ie

BSc Sustainability with Social Sciences, Policy & Law

This degree subject focuses on the social, cultural, legal, governance and justice dimensions of sustainability.

Progressing towards sustainability to ensure a healthy planet and human wellbeing requires significant societal adaptation and behavioural change.

What Will I Study?*

Sustainability with Social Sciences, Policy & Law is one of the degree subjects available through the common entry Sustainability course. Students study a common first year for the three Sustainability degree subjects and at the end of first year, choose their degree subject. Assuming students meet all the academic requirements, they are guaranteed a degree major, which they study in second, third and fourth year.

This outlines sample modules for a Sustainability with Social Sciences, Policy & Law student at UCD. Students may also select option and elective modules throughout their degree.

YEAR 1

- Introduction to Sustainability
- Sustainability Challenges
- Mapping a Sustainable World
- Environmental Change and Policy
- People, Places and Regions
- Law in Europe
- Global Justice
- Societal Challenges in the 21st Century

YEAR 3

- Sustainability in Action (field trip)
- Social Policy, Social Justice and the Environment
- Environment Law and Policy
- Environmental Management
- Sociology of Climate Change
- Global Risks and Resilience
- Applied Ethics
- Gender Inequality and Social Policy

YEAR 2

- Sustainability: Research Tools
- Communication in Sustainability
- Introduction to GIS for Sustainability
- Education for a Sustainable Future
- Cultural Heritage
- Achieving the Sustainable Development Goals
- Cities in a Global World
- Law and Courts

YEAR 4

- The Urban Environment
- Development Geographies
- International Human Rights Law
- Transport, Environment and Sustainability
- Climate Politics and Policy
- Environmental Assessment
- Interdisciplinary Project
- Evidence-Based Policy Making

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Graduates from this degree subject will have highly developed analytical skills, methodological and research competency and the ability to deal with complex problems requiring interdisciplinary solutions. These attributes are in significant demand in the public and private sectors. For example, corporate businesses, private consultancy firms, banking and education, as well as civil society organisations, state agencies and transnational organisations such as the United Nations Development Programme, European Commission, Environmental Protection Agency, and Teagasc. Graduates will be well equipped to undertake further study at Masters and Doctoral levels in a range of disciplinary areas.

Graduate Testimonial



Kendra

I was really attracted to this course because it has the 3 pillars of sustainability (society, economy, environment) at its core, which was the only undergraduate course that offered this. In first year I learned interdisciplinary skills from all 3 pillars, which has really given me an edge going into second year, as I am able to see beyond my degree subject and integrate the knowledge I have acquired from other fields, such as business and science. We are entering a new era, where every sector will need to be 'climate-literate,' especially the leaders of our countries. After I graduate, I would like to go into policy and law making for the EU, as I feel this is where I could make the most impact around climate change.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module which provides an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year. Students have completed internships in RPS Group, KPMG, Wind Energy Ireland and Environmental Consultants. Placements are secured on a competitive basis and are subject to change.

How to Apply

Sustainability

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



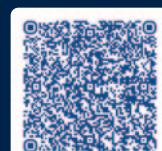
EU Enquiries

askscience@ucd.ie

www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

internationalenquiries@ucd.ie



SUSTAINABILITY

BSc Sustainability with Business & Economics

This degree subject helps you develop a comprehensive understanding of business and economic frameworks and how they can be harnessed to enhance sustainability across environmental, social, and economic dimensions. It provides flexible learning pathways, allowing students to integrate relevant modules from social sciences, humanities, business, and economics while offering opportunities to focus on key areas like global supply chain management, environmental policy, microeconomics, corporate responsibility, or sustainable business practices. The curriculum prioritises collaborative skill-building through interdisciplinary teamwork, equipping graduates to address complex sustainability challenges.

What Will I Study?*

Students study a common first year for the three Sustainability degree subjects and at the end of first year, choose their degree major. Assuming students meet all the academic requirements, students are guaranteed their degree major, which they study in second, third and fourth year. This outlines sample modules for a Sustainability with Business & Economics student at UCD. Students may also select option and elective modules throughout their degree.

YEAR 1

- Introduction to Sustainability
- Sustainability Challenges
- Economics and Sustainability
- Business in Society
- Environment Change and Policy
- Practical Statistics

YEAR 3

- Sustainability in Action (field trip)
- Economics of the Environment
- Intermediate Microeconomics
- Irish Economy
- Business Across Borders
- Transport Economics

YEAR 2

- Sustainability: Research Tools
- Communication in Sustainability
- Marketing: An Introduction
- Principles of Microeconomics
- Introduction to Quantitative Economics
- Introduction to Accounting

YEAR 4

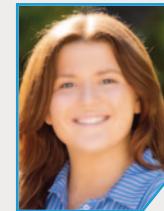
- Supply Chain Management
- Economics of Climate Change
- Consumer Psychology
- European Economy
- Sustainability Reporting
- Economics of Natural Resources
- The Urban Environment

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Graduates from this degree subject will have highly developed analytical skills, methodological and research competency and the ability to deal with complex problems requiring interdisciplinary solutions. These attributes are in significant demand in the public and private sectors. For example, corporate businesses, private consultancy firms, banking and education, as well as civil society organisations, state agencies and transnational organisations such as the United Nations Development Programme, European Commission, Environmental Protection Agency, and Teagasc. Graduates will be well equipped to undertake further study at Masters and Doctoral levels in a range of disciplinary areas.

Student Testimonial



Ellen

As someone with a keen interest in science and business, coupled with a passion for climate and social justice activism, Sustainability with Business and Economics is the perfect degree for me. The interdisciplinary nature of this programme broadens my knowledge base, fostering critical and systematic thinking skills crucial for addressing real-world sustainability challenges. I've had the opportunity to study a diverse range of modules from business in society, to earth science, and global justice. After graduation, to combine my interest in sustainability with my business management skills, I would like a career as a sustainability consultant, making this degree an ideal fit for my specific career goals. Despite the overwhelming global challenges, dedicating my education and future career to sustainability gives me hope that I can create positive change in the world.

Internship Opportunities

Students have the opportunity to complete a Professional Placement module which provides an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year. Students have completed internships in RPS Group, KPMG, PwC and Environmental Consultants. Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Sustainability

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



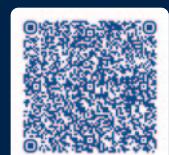
EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie



ACTUARIAL & FINANCIAL STUDIES

The Actuarial & Financial Studies course will prepare you for a professional career in the actuarial or financial professions.

Degree Subject

- Actuarial & Financial Studies

Exams of the Institute and Faculty of Actuaries, UK



The Actuarial and Financial Studies degree at UCD offers potential exemptions from the Core subjects CS1, CS2, CM1, CM2, CB1, CB2 and CP1 of the professional examinations of the Institute and Faculty of Actuaries, UK. Further information about becoming a fully qualified actuary is available on the Institute and Faculty of Actuaries, UK website at actuaries.org.uk/become-an-actuary.

Professional Work Placement in Third Year



Students have completed their work placement in a variety of companies and locations. The companies include Allianz, Aon, Deloitte, Irish Life, Mercer, Susquehanna (SIG) and Zurich. The locations include Dublin, London, Boston and New York. There is a wide choice of placements that last for 6-8 months, and these are secured through a competitive process.



Frequently Asked Questions

Q: How long does it take to become a qualified actuary?

A: Students must successfully complete professional exams and complete a work-based skills framework with their employer which includes a Learning Log.

The exams are held twice a year. It typically takes 3 to 6 years to complete the exams, depending on the extent to which you can claim exemptions on the basis of relevant third-level qualifications.

Q: Where can I find out more information about the actuarial profession?

A: The Society of Actuaries in Ireland is the professional body representing the actuarial profession in Ireland. The Society is dedicated to serving the public by fostering the highest standards of professionalism and competence in actuarial practice.

Further information on the actuarial profession in Ireland is available on the Society of Actuaries website at web.actuaries.ie

BAFS Actuarial & Financial Studies

As part of your studies, you will learn how actuaries understand the nature of risk and find ways to manage it. You will also develop the analytical skills and business knowledge necessary to design and manage programmes that control risk for the insurance and pension sectors.

What Will I Study?*

This is a sample set of modules that an Actuarial & Financial Studies student could study each year in UCD. Students may also select option and elective modules throughout their degree.

YEAR 1

- Introduction to Programming
- Foundations of Finance
- Numbers and Functions
- Linear Algebra
- Introduction to Analysis
- Introduction to Actuarial and Financial Studies
- Financial Accounting
- Differential and Difference Equations
- Advanced Calculus
- Statistical Modelling
- Fundamentals of Actuarial Business Theory

YEAR 3

- Investing and Trading
- Stochastic Models
- Survival Models
- Time Series Analysis
- Information Management for Actuaries
- Workplace Skills
- BAFS Professional Work Placement (at least 6 months)

YEAR 2

- Corporate Financial Management
- Fundamental Actuarial Mathematics
- Introduction to Probability
- Data Programming with R
- Modern Regression Analysis
- Economic History
- Inferential Statistics
- Introduction to Bayesian Analysis

YEAR 4

- Actuarial Statistics
- Actuarial Risk Management
- Financial and Actuarial Mathematics
- Actuarial Mathematics
- International Financial Management
- Statistical Machine Learning

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Actuaries have traditionally worked in the insurance and pensions industries but are increasingly moving into wider fields, where they can employ their range of skills.

Most graduates take positions as actuarial trainees in life insurance, pensions, health insurance, general insurance or investment. Some graduates also work in banking or finance as business or financial analysts. As an Actuarial & Financial Studies graduate, you are also eligible to pursue graduate study in statistics, computer science, economics, mathematics, management science, finance and other specialist business subjects.

Graduate Testimonial



Lateefat

I chose this course because I'm passionate about the intersection of maths and community. I have always enjoyed maths from a young age, finding joy in its complexities and challenges. I love the idea of being able to give back to society through my career. Throughout my time at UCD, I enjoyed many extra-curricular activities alongside academics, such as the French Society, Africa Society, and Ladies' Basketball Club. I completed my internship in London. I worked on the Single Risk Pricing team at Lloyd's. I got invaluable insight and experience into the intricacies of the insurance industry.

Internship Opportunities

Students complete an internship in the Spring Trimester of third year. There is a wide choice of placements that last for 6-8 months, and these are secured through a competitive process.

Students have completed their work placement in a variety of companies and locations. The companies include Allianz, Aon, Deloitte, Irish Life, Mercer, Susquehanna (SIG) and Zurich. The locations include Dublin, London, Boston and New York.

The internships listed are examples of past placements and are subject to change each year.

How to Apply

Actuarial & Financial Studies

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply



EU Enquiries

✉ askscience@ucd.ie

💻 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

✉ internationalenquiries@ucd.ie



COMPUTER SCIENCE

The Computer Science course is for students who are interested in specialising in Computer Science or Computer Science with Data Science & Artificial Intelligence and are interested in a career in software engineering, data analytics, working in the ICT sector and in research and development.

Degree Subjects

- Computer Science
- Computer Science with Data Science & Artificial Intelligence



This course covers computation and information, programming and software engineering, networks, database, operating systems, security, data science and artificial intelligence. The focus is on the fundamentals of the field, coupled with the latest technologies that will make your knowledge and skills immediately relevant in the industry.



Common First Year

70% Software Engineering
30% Mathematics



End of Second Year

You choose to major in either Computer Science or Computer Science with Data Science & Artificial Intelligence

Frequently Asked Questions

Q: What is Data Science?

A: Data science is about extracting insights from data that can transform the way a company operates. For example, understanding data can match millions of businesses with new customers around the world in the areas of advertising and e-commerce.

Q: Do I need to have prior experience of programming?

A: No. Computer Science is suitable for students with or without previous programming experience. There is no assumption that students have prior programming experience and all students will take introductory programming modules in first year.

Q: Where can I practice programming?

A: There are many excellent resources available online to try out programming and Computer Science. Beginners can use resources such as MIT's Scratch or Greenfoot. Students looking to advance their knowledge can also use resources such as Coursera and edX to sample free online courses in Computer Science.

BSc Computer Science

As part of your studies, you will learn the fundamentals of computation and information, develop programming skill in languages such as C, Java and Python, and learn about software engineering, mobile application development, networks, database technology and operating systems. There will also be opportunities for industry internships.

What Will I Study?*

Computer Science is one of the degree subjects available through the common entry Computer Science course. The UCD Computer Science degree covers the fundamentals of Computer Science while also exposing students to the contemporary languages and technologies used in the industry. Key topics include programming, foundational mathematics, advanced software engineering, cloud development, theory of computer science, networks and security. The principal programming languages used are C, Java and Python. Specialised topics include computer graphics, game development, robotics, mobile development and others. This outlines sample modules for a Computer Science student at UCD. Students may also select option and elective modules throughout their degree.

YEAR 1

- Introduction to Comp Architecture -
- Computer Programming - Functional Programming
- Software Engineering Project
- Foundations of Mathematics for Computer Science
- Intro to Data Science and AI -
- Critical Thinking - Formal Foundation 1

YEAR 3

- Foundations of Computing
- Multi-Paradigm Programming
- Software Engineering Project III
- Introduction to Artificial Intelligence
- Information Security
- Web Development

YEAR 2

- Digital Systems - Databases and Information Systems
- Object-Oriented Programming
- Computer Networking
- Software Engineering Project
- Introduction to Operating Systems
- Data Structures - Algorithms
- Linear Algebra
- Formal Foundations 2

YEAR 4

- Computer Science Project
- Spatial Information Systems
- Distributed Systems
- Advances in Wireless Networking
- Cloud Computing
- Mobile App Development

**Modules are subject to change each year and are not guaranteed by UCD.*

Career & Further Study Opportunities

A UCD Computer Science degree equips you with the fundamental skills to work in a variety of roles including software developer, software architect, engineering manager, database designer, web developer, network engineer, systems administrator or IT consultant. Graduates work in a wide range of domains including internet, telecommunications, healthcare, finance, online retail, gaming and social networking. Some graduates start their own companies, even immediately after graduating. Graduates can also pursue further study in computer science and in related areas, such as business, mathematics and engineering. Graduates also pursue research in computer science through PhD programmes in UCD or other institutions.

Graduate Testimonial



Thomas

The highlight of my time here was hosting the SISTEM tech conference at UCD. In third year, I had the chance to undertake a six-month software engineering internship at Amazon. It was a wonderful experience to apply my studies in a practical setting and receive invaluable mentorship from my teammates. This even led to me being hired as a full-time software engineer by Amazon, where I work on new and exciting problems every day.

Internship Opportunities

Students have an opportunity to undertake an industry placement in Third Year.

Assessment is based on a learning journal and a presentation from the student.

Students who do not undertake the longer internship option also have the opportunity to complete a Professional Placement module worth 5 credits. This module provides students with an opportunity to undertake a placement in industry (6-10 weeks) in the summer following third year.

Students in recent years have completed internships in Ericsson, SIG, KPMG, Workday, Yahoo, Microsoft, General Motors, Intel, Deloitte and AMD.

Placements are secured on a competitive basis and are subject to change each year.

How to Apply

Computer Science

EU Applicants: cao.ie

Non-EU Applicants: ucd.ie/apply

EU Enquiries

 askscience@ucd.ie

 www.ucd.ie/science/study/prospectiveundergraduatestudents

Non-EU Enquiries

 internationalenquiries@ucd.ie



BSc Computer Science with Data Science & Artificial Intelligence

As part of your studies, you will learn key skills to demonstrate basic knowledge and understanding of the fundamentals of Data Science and Artificial Intelligence. You will also develop the technical depth and the practical experience that you will need to stand out in an increasingly demanding marketplace.

What Will I Study?*

Computer Science with Data Science & Artificial Intelligence is one of the degree subjects available through the common entry Computer Science course. This degree follows the same first two years as the BSc in Computer Science, which will give you an excellent foundation in computer science and mathematics. The in-depth focus on Data Science & Artificial Intelligence begins in third year and provides the practical experience that you will need to stand out in an increasingly demanding market place. Modules will include hands-on experience with contemporary tools such as Hadoop, NoSQL, Python, SciPy, SciKit.Learn, Matplotlib, Numpy and Pandas. This is a sample pathway for a degree in Computer Science with Data Science & Artificial Intelligence. This outlines sample modules for a Computer Science with Data Science & Artificial Intelligence student at UCD. Students may also select option and elective modules throughout their degree.

YEAR 1

- Introduction to Comp Architecture
- Computer Programming
- Functional Programming
- Software Engineering Project
- Foundations of Mathematics for Computer Science
- Intro to Data Science and AI
- Critical Thinking
- Formal Foundation 1

YEAR 3

- Data Science in Python
- Probability Theory
- Introduction to Artificial Intelligence
- Network Analysis
- Information Visualisation
- Programming for Big Data
- Five Month Internship
- Data Science in Practice

YEAR 2

- Digital Systems
- Databases and Information Systems
- Object-Oriented Programming
- Computer Networking
- Software Engineering Project
- Introduction to Operating Systems
- Data Structures
- Algorithms
- Linear Algebra
- Formal Foundations 2

YEAR 4

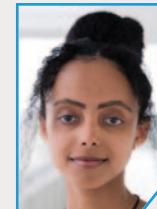
- Computer Science Project - Parallel Computing - Cloud Computing - Data Mining - Deep Learning - Machine Learning - Human-Centred AI - Generative AI: Language Models - Game Development - Multi-Agent Systems - Spatial Information Systems - Optimisation - Recommender Systems and Collective Intelligence - Connectionist Computing - Information Theory - Distributed Systems - Contemporary Software Development - Digital Media Ethics - Inference for Data Analytics

*Modules are subject to change each year and are not guaranteed by UCD.

Career & Further Study Opportunities

Graduates with training in Computer Science with Data Science & Artificial Intelligence work in fields such as banking and financial services, consultancy (e.g. Accenture, Deloitte, PwC), Internet companies (e.g. Google, PayPal and Meta), established ICT companies such as IBM, Microsoft and Intel; or in ICT Start-ups. Graduates can also pursue a range of MSc or PhD programmes such as the MSc Computer Science (Negotiated Learning), MSc Business Analytics or MSc Cognitive Science.

Student Testimonial



Kalkidan

The degree offered a comprehensive blend of theoretical knowledge and practical skills, making it the perfect fit for my interests and career aspirations. I have been a member of various UCD societies such as Netsoc, Women@compsci, Food Society and many more. This has allowed me to develop leadership skills and form connections with students who share my interests. After graduation, I aspire to work as a software developer in a leading tech company. I completed my first internship with SAP during my third year. Additionally, after finishing my fourth year, I completed a summer internship with Intel.

Internship Opportunities

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Students in recent years have completed internships in Bank of America, Amazon, Stripe, Hubspot, SAP, Deloitte, AIB, Zurich Insurance, Optum and Viasat.

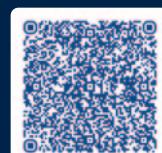
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Non-EU Enquiries

internationalenquiries@ucd.ie



UCD Jargon Buster



The following are some terms that you will come across when researching courses in UCD.

Academic Terms

BSc

Bachelor of Science

BAFS

Bachelor of Actuarial and Financial Studies

Degree Subject

Examples of degree subject areas are Microbiology, Physics with Astronomy & Space Science or Chemistry. In Science, your degree will eventually be in one of 26 different subjects.

Entry Requirements

The minimum standard in order to be eligible for consideration for admission.

Common Entry

A common entry programme has a single entry point for multiple potential degree options.

Stage

A student progresses through an undergraduate programme in stages. For full-time undergraduate students, a 60-credit stage will normally be completed in one academic year.

Trimester

The academic year in UCD is divided into Trimesters (Autumn, Spring, Summer). Undergraduate degree teaching takes place in the Autumn Trimester (September to December) and the Spring Trimester (January to May). This is normally 15 weeks of student activity: 12 weeks of teaching and learning, one week of revision and two weeks of revision and assessment.

Grade Point Average (GPA)

Each grade has a number associated with it, called a grade point. When you have completed all the modules of a Stage, all your grade points are averaged to get a Grade Point Average, or GPA, for that Stage.

Stream

Streams are used to categorise the 26 different degree subjects available in the common entry Science Course. By meeting the requirements of a particular stream in first year, the subjects within that stream remain available to choose in second year. The streams available are as follows:

- Biological, Biomedical & Biomolecular Sciences
- Earth & Environmental Sciences
- Chemistry (includes Medicinal/Sustainable)
- Mathematics (includes Applied/Financial/Statistics)
- Physics (includes Theoretical/Astronomy & Space Science)
- Science, Mathematics & Education

Students interested in degree subjects from more than one stream can select **Explore Multiple Streams**.

Information on Classes

Module

A self-contained unit of teaching and learning, which is usually studied over one Trimester. Undergraduate modules are normally 5 credits. A standard 5-credit UCD module represents 100-125 hours of student effort including time spent in class, studying and assessment. Modules in UCD are divided into core, option and elective modules.

Core Module

A compulsory module that you must do as part of your programme. You will usually be pre-registered to these modules.

Option Module

A module that is part of your programme but is not compulsory. You will be given a list of option modules to choose from when you register online.

Elective Module

As well as Core and Option modules, you can study Elective modules that either deepen your knowledge in your chosen programme or allow you to explore subjects outside of your area of study. For example, a student in Computer Science could take a Business or Language module.

Timetable

Each student will have their own personalised timetable based on their individual module selection. The timetable will be filled with a variety

of class types such as lectures, practicals, tutorials etc. An average first year timetable will have 20-30 hours of class time per week including lectures, practicals and tutorials. A sample timetable is on page 7.

Practicals

Practical (or laboratory) classes involve carrying out selected experiments, examining scientific material and getting hands-on experience of practical subjects. They generally take place in the afternoons and are of two-to-three hours duration.

Tutorials

Tutorials generally take place in a classroom with a smaller group size than lectures. They provide an opportunity to explore and apply the concepts, skills and competencies in a manner that is not usually possible in larger classroom environments.

Credit

This is a standard way of representing the amount of student effort, the achievement of learning outcomes and educational activity associated with a module. UCD utilises the European Credit Transfer System (ECTS). The ECTS was developed to facilitate educational mobility for students and inter-institutional cooperation amongst higher education institutions within the European Union.

Student Life

Orientation

To help you settle into life at UCD, orientation events are organised for new students prior to the start of term. This includes important academic advice as well as extra-curricular activities to help you settle into life at UCD.

Societies

UCD's student societies are a great way to explore your interests or develop new interests. From arts and culture to science and social service, you can find the community that aligns with your passion. An example is the UCD Science Society (SciSoc). SciSoc is one of UCD's biggest societies and it is responsible for a range of events

such as the annual "Cycle to Galway", Science Day festival, the Science Ball and many more.

Peer Mentor

Peer Mentors are students in Second or Third Year who very generously give of their time to help welcome and support Stage 1 students. Students are introduced to their Peer Mentor during Orientation.

Clubs

UCD sports clubs are at the centre of student sport. Clubs provide a range of opportunities to train, play and compete in sport, no matter your passion, ability or level.



University College Dublin
An Coláiste Ollscoile, Baile Átha Cliath



askscience@ucd.ie
www.ucd.ie/science
Find us on social media @UCDScience