



# University College Dublin

## Agriculture, Food Science and Human Nutrition



MAIN MENU

# UNDERGRADUATE PROGRAMMES

2018  
ENTRY

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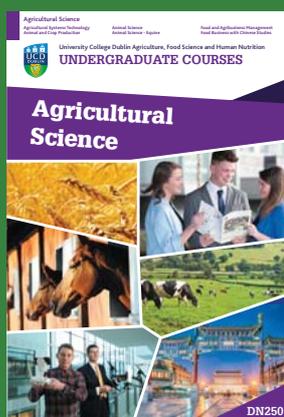
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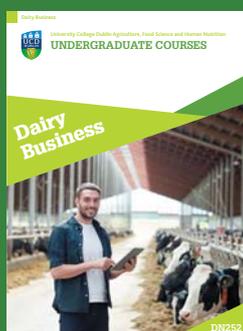
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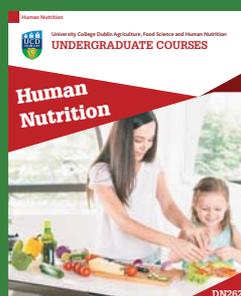
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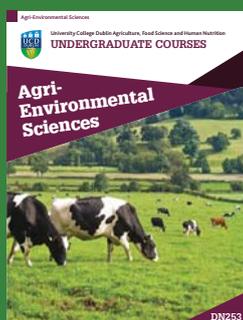
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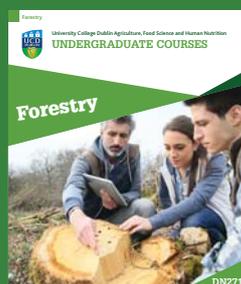
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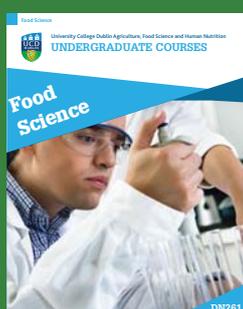
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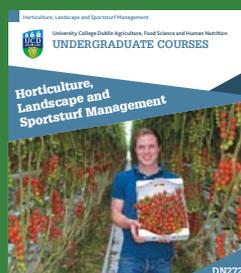
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# Welcome

UCD is Ireland's Global University. With over 160 years of tradition, 7,000 international students, 400 exchange partners and 235,000 alumni worldwide, UCD is at the forefront of global knowledge. We provide programmes with a curriculum that is constantly changing, informed by innovative research and driven by lecturers and professors at the cutting edge of their disciplines.

The School of Agriculture and Food Science is one of UCD's largest Schools and holds a unique position in Ireland. The School offers 13 undergraduate programmes each of which will provide you with an opportunity to study a range of subjects central to many of the major global challenges of today. These include, food production, food security, non-food land uses, environmental sustainability, rural development, nutrition, health, business and economics. The world is increasing its focus on the need for both sustainable and innovative foods for its increasing population, many of whom demand more sophisticated food and health solutions for a changing lifestyle. At the same time, environmental, sustainability and societal challenges are becoming more and more relevant in the context of agriculture and food businesses and policy making.

Our focus at the UCD School of Agriculture and Food Science is to develop the next generation of agriculture and food leaders. Agriculture and Food is Ireland's largest indigenous industry and is one that continues to show considerable growth with great potential into the future. Ranked number one in Ireland and in the top 100 in the 2017 QS University Global Subject Rankings for Agriculture and Forestry, students at the UCD School of Agriculture and Food Science will be exposed to the latest scientific discoveries and knowledge that underpins each of our four year honours degree programmes. Graduates of our programmes obtain a holistic education giving them the capacity to contribute significantly to the Irish and global agriculture and food industries. The School of Agriculture and Food Science is unique with programmes that span the entire food chain, providing a diverse range of career opportunities in Ireland and internationally. A modular syllabus, Professional Work Experience and International Study Abroad opportunities contribute to the development of highly sought after graduates with innovation, entrepreneurship, critical thinking and problem solving skills.

Please study this brochure and see for yourself the wide range of programmes on offer at the UCD School of Agriculture and Food Science.

We look forward to welcoming you to our community.

*Alex Evans*

Professor Alexander Evans  
UCD Dean of Agriculture



# What to Expect?

Our reputation for being the most friendly and close-knit community in UCD is well known. Small class sizes enable you to get to know your class and lecturers quickly. Active student committees ensure a full itinerary of events throughout the year.

Year one on each of our programmes are similar and you will undertake core science subjects such as Biology, Chemistry, Physics (students enrolling on the Dairy Business programme (DN252) will not be required to undertake a Physics subject in year one) and Maths on each programme. This strong scientific foundation will serve you well for years 2-4 of your programme and indeed when you graduate with excellent and diverse career opportunities.

Supports and initiatives such as the Mathematics Support Centre, tutorials, laboratories and continuous assessment are designed to assist you along the way. Your timetable is fully modular and you will undertake and be examined in approximately six subjects each semester, ensuring you always have a manageable workload. In later years, your programme will become more specialised and you will undertake more subjects directly related to your preferred programme.

You can't be expected to achieve unless you have access to the best facilities and technologies. Students on our programmes will have access to modern lecture and teaching facilities, a full range of laboratories and a new dedicated food science building, a 250ha research farm with its own laboratories, a horticulture field station and computer access for all students.

Professional Work Experience (PWE) and international study opportunities are available to students on each of our programmes and normally take place during year three. Students continually highlight PWE as the most enjoyable aspect of the programme and details on PWE and the UCD Agriculture, Food Science and Human Nutrition Study Abroad Exchange Programme are included in this brochure.

## NEW FOR 2018

BAgrSc  
Food Business  
with Chinese  
Studies





# Up and Coming Events

We know you have to make difficult decisions about your future study plans and careers and therefore we invite you to attend the following events where you can find out more about the Bachelor of Agricultural Science, BSc in Food Science and BSc in Human Nutrition degree programmes.

|                                |  |
|--------------------------------|--|
| <b>13-15 SEPTEMBER</b><br>2017 | <b>Higher Options</b><br>RDS, Dublin   |
| <b>19-21 SEPTEMBER</b><br>2017 | <b>National Ploughing Championships</b><br>Screggan, Tullamore, Co. Offaly   |
| <b>4 NOVEMBER</b><br>2017      | <b>UCD Open Day</b><br>O'Reilly Hall, UCD  |
| <b>15 NOVEMBER</b><br>2017     | <b>UCD School of Agriculture and Food Science<br/>Kilkenny Information Evening*</b><br>New Park Hotel, Kilkenny  |
| <b>23 NOVEMBER</b><br>2017     | <b>UCD School of Agriculture and Food Science<br/>Cork Information Evening *</b><br>Clayton Hotel, Cork  |
| <b>9 JANUARY</b><br>2018       | <b>UCD CAO Information Evening*</b><br>UCD   |
| <b>16 JANUARY</b><br>2018      | <b>UCD QQI-FET (FETAC) Entry to Science, Computer<br/>Science and Agriculture and Food Science Open Day*</b><br>Moore Auditorium, UCD O'Brien Centre for Science |
| <b>MARCH</b><br>2018           | <b>Agri Aware's Farm Walk and Talk at UCD Lyons<br/>Research Farm**</b><br>UCD Lyons Research Farm, Celbridge, Co Kildare  |
| <b>7 JUNE</b><br>2018          | <b>UCD Agriculture and Food Science Summer School*</b><br>UCD Agriculture and Food Science Centre  |

\* ADMISSION FREE BUT  
PRE BOOKING IS ESSENTIAL

Registration for our events is via our  
website at [www.ucd.ie/agfood](http://www.ucd.ie/agfood)

W: [www.ucd.ie/agfood](http://www.ucd.ie/agfood)

T: 01 7167194

E: [agandfoodprogrammes@ucd.ie](mailto:agandfoodprogrammes@ucd.ie)

\*\* Visit [www.agriaware.ie](http://www.agriaware.ie) for more  
information



## **UCD Agriculture and Food Science Programme Office**

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University College Dublin, Belfield, Dublin 4

**Tel:** +353 (0) 1 716 7194

**Email:** [agandfoodprogrammes@ucd.ie](mailto:agandfoodprogrammes@ucd.ie)

**Web:** [www.ucd.ie/agfood](http://www.ucd.ie/agfood)



Every attempt has been made to ensure that the information contained within this booklet is correct at the time of going to press, however the Agricultural Sciences Programme Board accepts no responsibility for any errors or omissions. New programmes are continually being introduced and existing programmes revised and therefore readers are advised to contact the UCD Agriculture and Food Science Programme Office for up to date programme details.

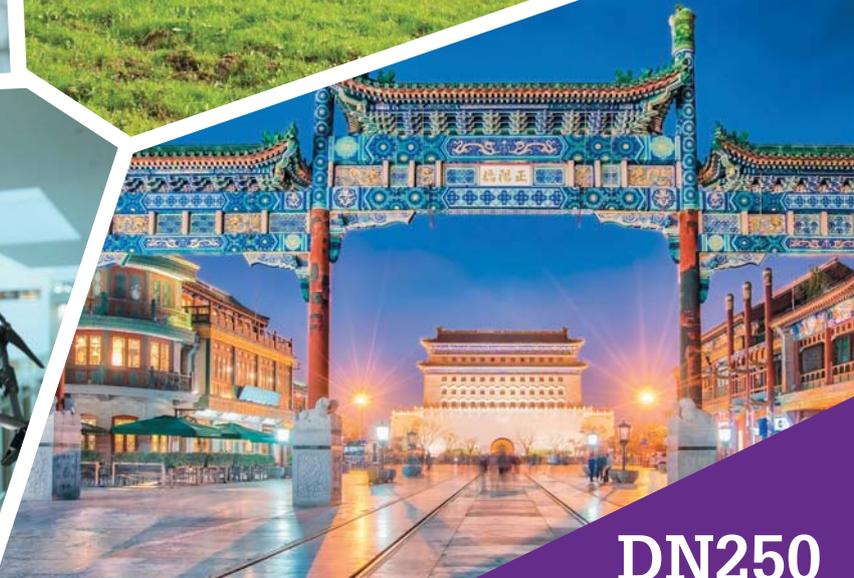


# University College Dublin Agriculture, Food Science and Human Nutrition UNDERGRADUATE COURSES

# Agricultural Science



MAIN MENU





Feirm Liam  
UCD Lyons

## Why Agricultural Science?

From animal science to farm management and conservation and protection of the wider environment, from the animal feed industry to enterprise development and equine science and innovation, from crop protection and global agribusiness to alternative energy sources and food chain technology, Agricultural Science will provide you with the foundation to take your career anywhere in the world.

Our exciting range of programmes cover a wide variety of different subjects offering you a broad choice of lifestyle and career path.

If you are interested in Agricultural Science, but are not yet certain of which area to specialise in, you can select the No Preference (NPF) option on your CAO form. Then, during your first year at UCD, you can choose your area of specialisation. Once you receive an offer on the Agricultural Science programme (DN250) you will be guaranteed a place in any of the six specialisations from second year.

If, on the other hand, you know which of the following six programmes you'd like to specialise in, you can select ONE of these programmes on your CAO application.

The CAO codes for the degree specialisations offered are:

**DN250** Agricultural Systems Technology

**DN250** Animal & Crop Production

**DN250** Animal Science

**DN250** Animal Science - Equine

**DN250** Food & Agribusiness Management

**DN250** Food Business with Chinese Studies

If you select one of the above six programmes when applying via the CAO, you can still change between any of the above six programme options up until the end of year one.

Students interested in progressing to the Food Business with Chinese Studies degree must undertake one Chinese language module in semester one and transfer to the Food Business with Chinese Studies degree option by the end of semester one.



## DN250

### Agricultural Science

#### CAO Points

Average 2017 (Round 1) 492

Minimum 2017 (Round 1) 455

#### Minimum A Level:

AABb (Excluding Maths Bonus Points)

ABBc (Including Maths Bonus Points)

*\*Students should note that entry requirements and programme quotas are subject to change and students are advised to contact [www.ucd.ie/registry/admissions/er.html](http://www.ucd.ie/registry/admissions/er.html) prior to submitting an application to determine the entry requirements for a particular programme.*

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## WHAT WILL I STUDY?

All our programmes have a similar first year, designed to give you a strong foundation in the core sciences, maths and economics, which are needed for the rest of your studies. You will study subjects in

- Maths
- Chemistry
- Physics
- Cell and Plant Biology
- Agricultural Economics & Business
- A selection of Agricultural Science based subjects

Your subjects in year two will depend on which of the six programmes you decide to specialise in from year two. Second, third and fourth year subjects for each programme are detailed on pages 9, 10 and 11.



## Agricultural Systems Technology

With a focus on design, numeracy and technology, students of Agricultural Systems Technology will be committed and engaged with farming and food production, and specifically with technology to enhance efficiency, sustainability and reliability. Technologies of interest range from computer systems, networks, data management and sensors through machinery systems to precision agriculture. This degree will appeal to students who wish to build their knowledge and skills-base to address the complexities of developing, deploying and managing technology for the agriculture and food sector.

### Student View

**Bill O'Neill | Year 2**

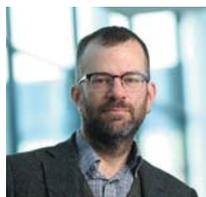
My interest in the Agricultural Systems Technology programme stemmed from a combination of having an avid interest in engineering as well as being immersed in agriculture due to my farming background. The fact that a professional work placement and the opportunity to take a semester abroad was included really piqued my interest and helped to make my decision to study at UCD an easy one. I'm now looking forward to spending my first semester of third year at Purdue University in the USA, which I feel will give me a great insight in to the way technology is applied to agricultural enterprises in America, as well as experiencing a new culture and different type of college life. With all the current advances in agriculture and the increased dependence on precision and accuracy, I am glad to be studying in this area. The small class number makes the material very manageable to learn as it almost feels like a one-on-one with the course lecturers. In the future I wouldn't rule out the option of returning to my home farm, but I also feel there will be plenty of other employment opportunities in the sector and will leave me as a very employable graduate.



### Staff View

**Professor Nick Holden | Academic Programme Co-ordinator**

Agriculture is becoming increasingly reliant on technology to achieve safe, sustainable food production. Concepts such as precision agriculture, smart farming and sustainable production require a new generation of agriculture experts, who like those who have gone before, have a thorough knowledge of soils, animals, crops and machinery, but in addition they also understand computer systems, networks, sensors, data management and programming. The industry requires graduates with expertise in both agricultural and data science. Our programme was developed in consultation with leading agricultural companies in Ireland. It is built on a foundation of basic and agricultural science as the starting point to explore agricultural technology (GIS, remote sensing, proximal sensing, precision agriculture, engineering technologies) and data science (programming, data, algorithms, databases and networks), which is then applied through both professional work experience and a capstone project. Graduates will be equipped with the skills that can open a diverse range of opportunities in the agri-food sector.



## DN250 Agricultural Systems Technology

### CAO Points

Average 2017 (Round 1) 492

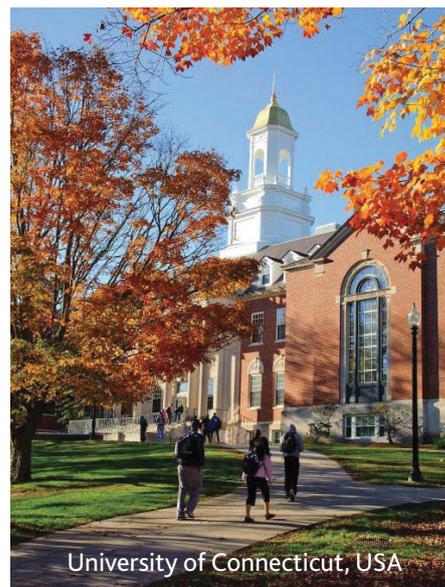
Minimum 2017 (Round 1) 455

### Minimum A Level:

AABb (Excluding Maths Bonus Points)

ABBc (Including Maths Bonus Points)

*\*Students should note that entry requirements and programme quotas are subject to change and students are advised to contact [www.ucd.ie/registry/admissions/er.html](http://www.ucd.ie/registry/admissions/er.html) prior to submitting an application to determine the entry requirements for a particular programme.*



University of Connecticut, USA

### PROFESSIONAL WORK EXPERIENCE AND STUDY ABROAD OPPORTUNITIES

Five months Professional Work Experience takes place in year three of the Agricultural Systems Technology programme. A dedicated Professional Work Experience advisor will help ensure you gain relevant experience during this time. In recent years, increasing numbers of students on School of Agriculture and Food Science programmes have opted to complete Professional Work Experience internationally.

You can also study abroad for one semester, at universities including:

- University of Connecticut, USA
- Iowa State University, USA
- University of Queensland
- Purdue University, USA
- Michigan State University, USA

There are a limited number of scholarships available, on a competitive basis, which support some of the costs associated with studying and completing Professional Work Experience abroad.



## DN250 Animal and Crop Production

### CAO Points

Average 2017 (Round 1) 492

Minimum 2017 (Round 1) 455

### Minimum A Level:

AABb (Excluding Maths Bonus Points)

ABbc (Including Maths Bonus Points)

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## Animal and Crop Production

The science and business of producing Animals and Crops in an efficient but also sustainable and environmentally friendly manner is just one example of the challenges facing Agricultural Scientists, Farmers and Agribusinesses in Ireland, the EU and globally. As an Animal and Crop Production student you will have access to international experts that will help you develop:

- Knowledge of the growth, development and improvement of farm animals and crops
- The capacity to formulate animal and crop production systems that are economical and sustainable
- Communication and IT skills
- The capacity for lifelong learning so as to remain informed of evolving technical, economic and regulatory frameworks
- Knowledge of the agribusiness industry.

## Student View

**Karen McGrath** | Year 4

Choosing Animal and Crop Production allowed me to keep my options open and enabled me to study an array of topics across both the animal and crop sectors including grassland management, animal nutrition and farm business management. Lectures are delivered by researchers who are experts in their fields, and their passion for teaching and agriculture is palpable. The School of Ag is renowned in UCD for having a strong community ethos - friendly faces, cups of tea and debates of rising or falling prices are not uncommon in the corridors. My experience of the course to date has exceeded all previous expectations and the friends and memories I have made will stay with me forever.



## Graduate View

**Eoin Lowry** | Agribusiness Editor, Irish Farmers Journal

I can confidently say that the Agricultural Science degree at UCD was the catalyst that provided me with such great opportunities that I have experienced over the years. I don't believe there is a degree that offers so much diverse possibilities as a graduate. I studied animal and crop production simply because I had a passion for crops having grown up on a tillage farm. It has allowed me to experience farming, agribusiness and people first hand in more than 50 countries around the world including China, Nigeria, Saudi Arabia and Brazil. As part of my work today, networking and business relationships are critical and I still meet many great friends from Ag. As Agribusiness Editor with the Irish Farmers Journal, my science background is becoming more important as companies in the food sector are increasingly aware of the importance of healthy and nutritious food that is produced in an environmentally friendly and safe way. I am extremely proud to call myself an Ag.



## PROFESSIONAL WORK EXPERIENCE AND STUDY ABROAD OPPORTUNITIES

Professional Work Experience (PWE) takes place between January and August in Stage three. A dedicated PWE advisor will help ensure you gain experience in each of the relevant enterprises.

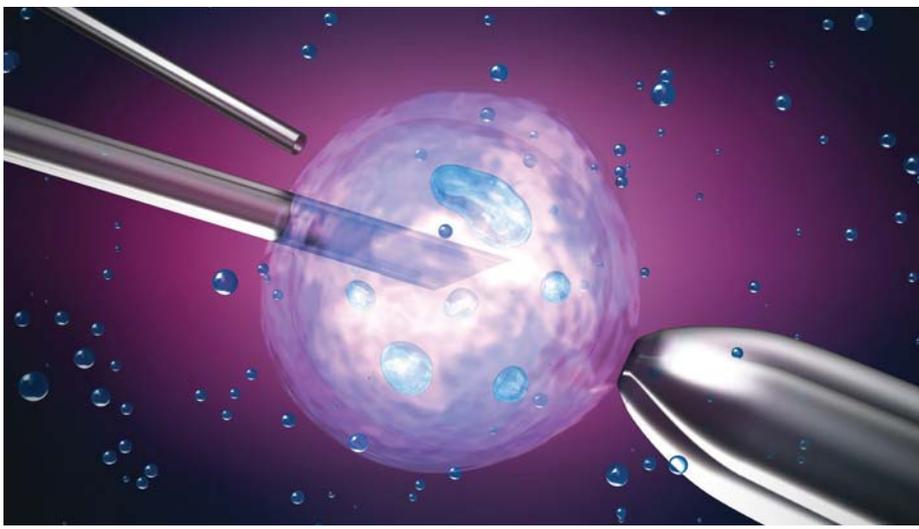
You can also study abroad for one semester, at universities including:

- Lincoln University, NZ
- Iowa State University, USA
- University of Illinois, USA
- Purdue University, USA
- Michigan State University, USA

There are a limited number of scholarships available, on a competitive basis, which support some of the costs associated with studying and completing PWE abroad.

"PWE is an excellent opportunity to gain experience and establish connections within the agricultural industry. The School's strong links and reputation with farms and companies across Ireland and the rest of the world made finding PWE placements easy and afforded me the opportunity to travel to New Zealand for four unforgettable months, where I worked on an 1100 dairy cow farm."

- Karen McGrath



## DN250 Animal Science

### CAO Points

Average 2017 (Round 1) 492

Minimum 2017 (Round 1) 455

### Minimum A Level:

AABb (Excluding Maths Bonus Points)

ABbc (Including Maths Bonus Points)

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## Animal Science

Animal Science is connected with all aspects relevant to the development, growth and health of animals including breeding, nutrition, reproduction, genomics and physiology. At the core of Animal Science is the study of the applied sciences that are fundamental to understanding how animals function and also underpin the principles of livestock production. The degree will give you an appreciation of:

- The growth and development of domestic farm animals, and animal behaviour and welfare
- Animal production systems and how the components are integrated and managed in an environmentally friendly and sustainable manner
- The animal industry in Ireland, the context in which it operates and its relationship to animal industries in Europe and worldwide.

## Student View

**Rachel White** | Year 4

Having grown up on a dairy farm with a passion for livestock there was never any question in my mind that Animal Science in UCD was the course for me. I wanted a course where I would get hands-on practical learning, meet new friends and have the chance to study abroad.



Animal Science has given me great knowledge of the agriculture industry in Ireland and internationally. I have studied a variety of animal science modules such as breeding, nutrition and reproduction while also dipping my toes in business, ag policy and communications to give me a thoroughly well rounded education. But it is the experience outside of the classroom that has made my four years at UCD so fantastic; PWE, farm visits and making friends for life through involvement in AgSoc. From day one in the Ag common room through to final year, 'Agriculture' is known as a family throughout the university and no other course comes anywhere close to the fun and support you experience here.

## Student View

**Michael Egan** | Grassland Research Officer, Teagasc

I had a keen interest in agriculture from an early age and studying Agricultural Science in UCD was a natural choice for me. The course was very interesting and all the lecturers were extremely friendly and more importantly, passionate about their subject which resulted in engaging lectures and good discussions.



After my four years I decided to enter a postgrad, I was awarded a PhD between UCD and Teagasc; the basic skills I gained from my time at UCD in my undergraduate equipped me with the skills necessary to complete my PhD. The support I received from my UCD supervisors and admin staff was excellent and made for an easy transition in to postgraduate study. I would recommend anyone with an interest in Agricultural Science to consider attending UCD or go talk to the staff and find out more.



Kansas State University

## PROFESSIONAL WORK EXPERIENCE AND STUDY ABROAD OPPORTUNITIES

Five months Professional Work Experience takes place in year three of the Animal Science programme. A dedicated Professional Work Experience advisor will help ensure you gain relevant experience during this time. In recent years, increasing numbers have opted to complete Professional Work Experience abroad, with New Zealand and USA particularly popular options.

You can also study abroad for one semester, at universities including:

- Cornell University, USA
- Kansas State University, USA
- University of Maryland, USA
- Lincoln University, NZ
- Purdue University, USA

There are a limited number of scholarships available, on a competitive basis, which support some of the costs associated with studying and completing Professional Work Experience abroad.

"I attended Cornell University on the Study Abroad Student Exchange Programme. Here I got to focus on my passion for dairy, I learned how to AI and ultrasound cows, formulate diets and visited farms all over the state. It was a life changing experience and I would encourage everyone to study or work abroad during their college careers." - Rachel White



## DN250 Animal Science - Equine

### CAO Points

Average 2017 (Round 1) 492

Minimum 2017 (Round 1) 455

### Minimum A Level:

AABb (Excluding Maths Bonus Points)

ABBc (Including Maths Bonus Points)

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## Animal Science - Equine

Animal Science – Equine focuses on the applied sciences that underpin animal and veterinary biosciences, with emphasis on the horse. The degree provides the scientific knowledge and professional skills necessary for professional leadership roles within many aspects of the animal and equine science industries. You will learn about:

- The growth and development of farm animals, how they function, their behaviour and welfare
- Animal production systems and how the components are integrated and managed in an environmentally friendly manner
- The equine industry in Ireland, its global context and entrepreneurial opportunities
- Equine health, reproduction, genetics, breeding, nutrition and exercise physiology
- Advances and future directions in research with emphasis on equine genetics/genomics.

## Student View

**Liam Grogan | Year 4**

I have always had an interest and passion for horses and this degree has only increased, by magnitudes, that enthusiasm. The degree deals with the scientific aspects of the equine industries and covers areas such as nutrition, reproduction, genetics and health and welfare. For my professional work experience I was lucky enough to spend five months working in a Japanese thoroughbred breeding stud with some of the best racehorses in the world. My time spent in Japan was one of the most enjoyable aspects of the course and I learned more than I could have imagined from that experience. Pursuing this degree in equine animal science has given me a great appreciation and capacity to understand the equine athlete in a scientific manner and vastly improved my knowledge of all things agricultural.



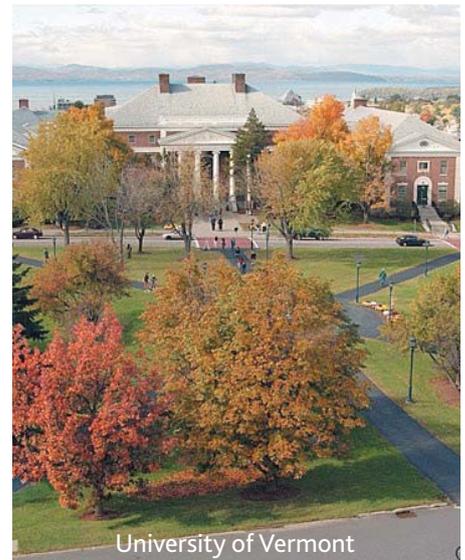
## Student View

**Heather Van Den Berg | Year 4**

I chose to study Animal Science-Equine at UCD because of my profound interest in both science and horses, and I knew this degree would allow me to combine both interests. This course is jam-packed with science from the get-go, which has allowed me to get a basis in science as well as equine specific studies. Before starting off this degree, I was only interested in the leisure side of the equine industry, but while on Professional Work Experience, I focused on the Thoroughbred Industry, which has helped me to gain the necessary skills I will need for my future endeavours, including helping me to pursue my ambitions of becoming a Stud Manager, as well as with gaining valuable contacts and knowledge.



This degree has allowed me to develop in many ways and I would highly recommend it to anyone looking to study both horses and science simultaneously!



University of Vermont

## PROFESSIONAL WORK EXPERIENCE AND STUDY ABROAD OPPORTUNITIES

A five month Professional Work Experience (PWE) placement is integral to your Animal Science-Equine degree and is an invaluable learning and networking opportunity. Exciting options include placements on stud farms in the Kentucky Bluegrass region and Japan, top show-jumping and eventing yards in Ireland, and with Tattersalls Ireland and Horse Sport Ireland. Students also have the opportunity to train towards a British Horse Society Assistant Instructorship certification at a leading Irish equestrian centre (additional training costs are involved).

You can also study abroad for one semester, at universities including:

- University of Vermont, USA
- Kansas State University, USA
- University of Queensland, Australia
- Purdue University, USA
- Michigan State University, USA



## DN250 Food and Agribusiness Management

### CAO Points

Average 2017 (Round 1) 492

Minimum 2017 (Round 1) 455

### Minimum A Level:

AABb(Excluding Maths Bonus Points)

ABBc (Including Maths Bonus Points)

*\*Students should note that entry requirements and programme quotas are subject to change and students are advised to contact*

*www.ucd.ie/registry/admissions/er.html prior to submitting an application to determine the entry requirements for a particular programme.*

## Food and Agribusiness Management

If you enjoy science and business, the Food and Agribusiness Management degree programme provides a unique opportunity to gain an understanding of both subjects. As a result, graduates are well placed to occupy leading roles in a variety of sectors. During the Food and Agribusiness Management degree, you will learn how the principles of economics and business management apply to farming, food production and marketing. You will gain an understanding of how the Irish and international food systems deliver food products and services that people want, and how farmers and food manufacturers can produce profitably, while also taking care of the natural environment.

The four year degree programme provides a unique opportunity to understand both business and science, focusing on the agri-food sector – Ireland’s largest indigenous industry. You will develop skills that may be used across a wide range of jobs and experiences.

## Student View

**Liam Sammon** | Year 4

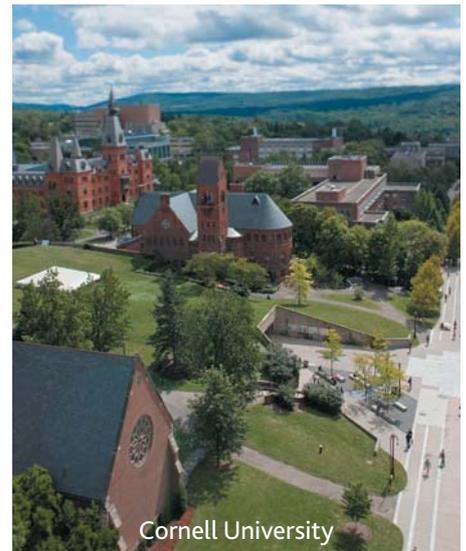
Starting out as an omnibus student was hugely beneficial in my college experience. Although I was not 100% sure on what major I would take, I knew my future career would be in the agricultural industry. In my third year, I was lucky enough to study abroad at the University of Illinois for one semester, followed by a PWE placement with Aurivo Co-op; an experience that allowed me to bring much of my learnings from the classroom to the workplace. I would highly recommend taking the opportunity to study abroad whilst also choosing a PWE placement that will be suited to your future career. Overall, Food and Agribusiness Management is a deeply rewarding degree with great opportunities to work with some of the biggest Irish agribusiness companies.



## Graduate View

**Mary Delaney** | Head of Equine & Tillage Sales, Glanbia Agribusiness

I have always had a passion for agriculture and the agri food sector and I made a fantastic choice by selecting agricultural science in UCD. It has an excellent curriculum and provided an ideal foundation on which to build my career. I specialised in Agribusiness and Rural Development and on completion I joined the work force immediately. I am currently Head of Equine and Tillage Sales in Glanbia Ireland where I have worked for over a decade. Because of my very positive experience in UCD, I became an active member of the Agricultural Science Association (ASA) which looks after the professional interests of agricultural science graduates; it is also uniquely placed to provide the platforms for knowledge sharing, networking, discussion and debate on topics of critical importance to the agri-food sector. I joined the council of ASA in 2013 and I was appointed president of the ASA in September 2016 for a one year term.



Cornell University

## PROFESSIONAL WORK EXPERIENCE AND STUDY ABROAD OPPORTUNITIES

Professional Work Experience in the food and agribusiness industry or related sectors is undertaken between January and August in year three of this programme. This helps you build your skills, apply the knowledge you have learnt and in many cases can lead to employment following graduation. In recent years, increasing numbers have opted to complete Professional Work Experience abroad.

You can also study abroad for one semester, at universities including:

- University of Illinois, USA
- Kansas State University, USA
- University of Queensland, Australia
- Purdue University, USA
- Cornell University, USA

There are a limited number of scholarships available, on a competitive basis, which support some of the costs associated with studying and completing Professional Work Experience abroad.

See Programme Pathway model for Food and Agribusiness Management on page 11.



## DN250 Food Business with Chinese Studies

### CAO Points

Average 2017 (Round 1) 492

Minimum 2017 (Round 1) 455

### Minimum A Level:

AABb (Excluding Maths Bonus Points)

ABBc (Including Maths Bonus Points)

*\*Students should note that entry requirements and programme quotas are subject to change and students are advised to contact [www.ucd.ie/registry/admissions/er.html](http://www.ucd.ie/registry/admissions/er.html) prior to submitting an application to determine the entry requirements for a particular programme.*

## Food Business with Chinese Studies

The Food Business with Chinese Studies programme reflects the changing market landscape, and aims to develop graduates with the skills and talent urgently required by the Irish food industry. With Brexit and the uncertainty involving the UK market, export expansion to the emerging markets has critical strategic importance to the Irish food industry and the overall economy. The changing market landscape requires improved foreign language capability of Irish companies to facilitate access to new markets, and to help sustain and strengthen the modern agrifood and agribusiness companies.

### Staff View

**Dr Chenguang Li** | Academic Programme Co-ordinator

Food and diet often have strong regional and cultural traits—it reflects what were available historically, and how the culture and society transform over time. Therefore, doing food business in a global context is not a simple task. It not only commands the practitioners to have the relevant food business knowledge and skill, but also the ability to understand and fulfil the specific needs of consumers in the target markets.



China, expected to become the first billion-euro market for Irish food and drink exports outside of the UK within the next two years, has become an exciting opportunity for young people aspiring to seek their career path in the global food business domain.

Our programme is designed to provide students with a quality education that combines the basic food science and business education with Chinese language and cultural training. Equipped with such knowledge, skills and ability, we believe there will be strong demands from the food industry for our future graduates.

### Staff View

**Professor Liming Wang** | Director, UCD Confucius Institute for Ireland and Irish Institute for Chinese Studies

Food business and trade between China and Ireland has witnessed consecutive years of fast growth, as China is currently the second largest market for Irish pigmeat and dairy and remains within the top five most important markets in other agri-food sectors, such as seafood, prepared foods and sheepmeat. Ireland has also become the first EU country to have its beef import ban lifted by China.



China is expected to soon be the number one export destination of Irish food products, especially when considering that Ireland is facing tremendous challenges and uncertainties due to Brexit. Therefore, the talent demand is growing with prospect of rising demand from China for Irish food products. Students by taking this programme will be prepared with not just language skills, but also the business and cultural skills needed to succeed in the thriving food business sector with China.



### STUDY ABROAD IN CHINA

Students will complete year three of their studies in China at one of UCD's partner Universities, where you will take intermediate or advanced Chinese language courses and a range of interesting and relevant modules.

There will be a limited number of language scholarship opportunities available on a competitive basis that will cover tuition fees and accommodation for either one or two semesters in China.

In addition to the benefit of a structured academic programme, students will also experience first hand the diverse culture of China and the vibrant economic growth that the second largest economy in the world has to offer.

Living and studying in a different cultural environment will provide students with an eye-opening and life changing experience that will also help you make friends and develop networks across the globe.

See Programme Pathway model for Food Business with Chinese Studies on page 11.

# Programme Pathway Models

## Agricultural Systems Technology

DN250

### Year 1 Subjects

Animal Biology & Evolution  
Introductory Chemistry  
Mathematics  
Physics  
Ag Economics & Business  
Intro to Biomolecules  
Biosystems Engineering Design Challenge  
Land Use & Environment  
Cell & Plant Biology  
Intro to Programming  
Elective Modules

### Year 2 Subjects

Agricultural Eng Principles  
Food Physics  
Animal Nutrition  
Soil Science Basics  
Principles of Crop Science  
Health, Welfare & Safety  
Principles of Animal Science  
Food Macronutrients  
Applied Biostatistics  
Agricultural Microbiology  
Elective Modules

### Year 3 Subjects

Agri Mech: Engines & Crop Equip  
Agri Mech: Hydraulics & Component  
Biosys Eng Research Trends  
Business Management  
Data Structures & Algorithms  
Exp Design & Data Analysis  
GIS & Remote Sensing  
Grass & Forage Production  
Numerical Methods for Agriculture  
Sensors and Sensing Systems  
Professional Work Experience  
Elective Module

### Year 4 Subjects

Food Process Technology  
Precision Agriculture  
Databases & Information Systems  
Experimental Project  
Life Cycle Assessment  
Waste Management  
Quantitative Risk Assessment  
Elective Modules

## BAgrSc Honours

### UCD Graduate Study

MSc Crops and Green Energy  
MSc Public Health Engineering Technology  
MEngSc Food Engineering  
MSc Food Safety & Risk Analysis  
MSc and PhD Research  
MAgrSc Sustainable Agriculture and Rural Development  
MAgrSc Environmental Resource Mgt

### Career Opportunities

Technical Engineer  
Teacher/Lecturer  
Production Manager  
Farm Manager  
Operations Manager  
Policy Analyst  
Business Manager

Technical Sales Manager  
Scientist  
Environmental Consultant  
Project Manager  
Food Processing  
Banker

### Conversion or Complementary Courses

Postgraduate Diploma in Education  
MSc Business Studies  
Master of Business Administration  
HDip Computer Science  
Master of Accounting

MAIN MENU

## Animal and Crop Production

DN250

### Year 1 Subjects

Animal Biology & Evolution  
Physics  
Introductory Chemistry  
Maths  
Ag Economics & Business  
Intro to Animal Science  
Intro to Crop Science  
Information Skills  
Cell & Plant Biology  
Intro to Biomolecules  
Elective Modules

### Year 2 Subjects

Agricultural Botany  
Soil Science Basics  
Genetics and Biotechnology  
Agricultural Microbiology  
Animal Nutrition I  
Health, Welfare and Safety  
Business Management  
Applied Biostatistics  
Buildings & Environment  
Arable Crop Production  
Agricultural Biochemistry  
Elective Module

### Year 3 Subjects

Animal Reproduction  
Pests and Parasites  
Soil Science Applications  
Plant Diseases - Biology  
Professional Work Experience  
Elective Module

### Year 4 Subjects

Grass and Forage Production  
Animal Nutrition II  
Professional Communications  
Students visit UCD's Lyons Research Farm to get hands-on practical experience  
Ruminant Animal Production  
Non-ruminant Animal Production  
Cereal Production  
Farm Business Management  
Root & Alternative Crop Production  
Elective Modules

## BAgrSc Honours

### UCD Graduate Study

MAgrSc Agricultural Extension and Innovation  
MAgrSc Sustainable Agriculture and Rural Development  
MAgrSc Environmental Resource Mgt  
MSc Crops and Green Energy  
Walsh Fellowship Research Opportunities  
MSc and PhD Research Opportunities

### Career Opportunities

Agricultural Consultant  
Teacher/Lecturer  
Production Manager  
Farm Manager  
Journalism  
Agricultural Inspector  
Communications Manager

Project Management  
Technical Engineer  
Policy Analyst  
Government Official  
Business Manager  
Technical Sales Manager  
Scientist

### Conversion or Complementary Courses

Postgraduate Diploma in Education  
Graduate Veterinary Medicine  
MSc Business Studies  
Master of Business Administration  
HDip Computer Science  
Master of Accounting

# Animal Science

DN250

## Year 1 Subjects

Animal Biology & Evolution  
Introductory Chemistry  
Mathematics  
Physics  
Intro to Biomolecules  
Ag Economics & Business  
Intro to Animal Science  
Information Skills  
Cell & Plant Biology  
Intro to Crop Science  
Elective Modules

## Year 2 Subjects

Genetics & Biotechnology  
Animal Nutrition I  
Applied Biostatistics  
Business Management  
Agricultural Microbiology  
Soil Science Basics  
Buildings & Environment  
Agricultural Biochemistry  
Health, Welfare and Safety  
Elective Modules

## Year 3 Subjects

Animal Reproduction  
Animal Breeding  
Animal Physiology  
Animal Genomics  
Agri-Env. Issues & Policy  
Food Microbiology  
Professional Work Experience  
Exp Design & Data Analysis  
Elective Modules

## Year 4 Subjects

Animal Health, Behaviour & Welfare  
Grass & Forage Production  
Animal Nutrition II  
Students visit UCD's Lyons Research Farm to get hands-on practical experience.  
Ruminant Animal Production  
Non-ruminant Animal Production  
Farm Business Management  
Professional Communications  
Elective Modules

## BAgrSc Honours

### UCD Graduate Study

MSc Humanitarian Action  
MAgrSc Sustainable Agriculture and Rural Development  
MAgrSc Environmental Resource Mgt  
MAgrSc Agricultural Extension and Innovation  
Walsh Fellowship Research Opportunities  
MSc and PhD Research Opportunities

### Career Opportunities

Teacher/ Lecturer  
Production Manager  
Farm Manager  
Journalism  
Agricultural Consultant  
Agricultural Inspector  
Communications Manager  
Embryologist  
Nutritionist  
Quality Assurance Officer  
Technical Engineer  
Policy Analyst  
Government Official  
Business Manager  
Technical Sales Manager  
Scientist

### Conversion or Complementary Courses

Postgraduate Diploma in Education  
Graduate Veterinary Medicine  
MSc Business Studies  
Master of Business Administration  
HDip Computer Science  
Master of Accounting

# Animal Science - Equine

DN250

## Year 1 Subjects

Animal Biology & Evolution  
Introductory Chemistry  
Physics  
Mathematics  
Ag Economics & Business  
Intro to Animal Science  
Information Skills  
Cell & Plant Biology  
Intro to Biomolecules  
Intro to Crop Science  
Elective Modules

## Year 2 Subjects

Genetics and Biotechnology  
Animal Nutrition  
Agricultural Microbiology  
Soil Science Basics  
Agricultural Biochemistry  
Principles of Animal Science  
Business Management  
Equine Industries  
Food Macronutrients  
Applied Biostatistics  
Health, Welfare & Safety  
Elective Module

## Year 3 Subjects

Animal Reproduction  
Animal Breeding  
Animal Genomics  
Animal Physiology  
Agri-Env Issues & Policy  
Professional Work Experience  
Equine Reproduction and Breeding Management  
Scientific Writing & Review  
Equine Health & Husbandry  
Elective Module

## Year 4 Subjects

Equine Anatomy & Physiology of Exercise  
Farm Business Management  
Animal Health, Behaviour & Welfare  
Equine Genetics  
Equine Nutrition  
Grass & Forage Production  
Food & Ag Policy  
Exp Design & Data Analysis  
Professional Communications  
Elective Modules

## BAgrSc Honours

### UCD Graduate Study

MAgrSc Sustainable Agriculture and Rural Development  
Walsh Fellowship Research Opportunities  
MSc and PhD Research Opportunities  
MAgrSc Environmental Resource Mgt  
MAgrSc Agricultural Extension and Innovation  
MSc Food Safety & Risk Analysis  
MSc Humanitarian Action

### Career Opportunities

Equine Enterprise Management  
Teacher  
Marketing Manager  
Equine leisure, recreation and tourism activities  
Stud Management  
Journalism  
Lecturer  
Equine Geneticist  
Business Manager  
Communications Manager  
Technical Sales Manager  
Equine Scientist  
Government Official  
Policy Analyst  
Consultant

### Conversion or Complementary Courses

Postgraduate Diploma in Education  
Graduate Veterinary Medicine  
MSc Business Studies  
Master of Business Administration  
HDip Computer Science  
Master of Accounting  
Darley International Student Programme

# Food & Agribusiness Management

DN250

## Year 1 Subjects

Animal Biology & Evolution  
Introductory Chemistry  
Physics  
Mathematics  
Ag Economics & Business  
Intro to Food & Agbus Mgmt  
Land Use & Environment  
Cell & Plant Biology  
Intro to Biomolecules  
Elective Modules

## Year 2 Subjects

Business Management  
Business Law  
Principles of Animal Science  
Principles of Crop Science  
Applied Economic Analysis  
Applied Biostatistics  
Food Macronutrients  
Agricultural Microbiology  
Health, Welfare & Safety  
Elective Modules

## Year 3 Subjects

Financial Planning and Control  
Food Chain Integrity  
Principles of Meat Science  
Introduction to Econometrics  
Professional Work Experience  
Elective Modules

## Year 4 Subjects

Farm Business Management  
Agri-Environmental Economics  
Professional Communications  
Research Project  
Food and Agricultural Policy  
IT and E-Business  
International Food Marketing  
Enterprise Development  
Food & Agribusiness Strategy  
Agri-Taxation  
Elective Module

## BAgrSc Honours

### UCD Graduate Study

MSc Humanitarian Action  
MAgrSc Sustainable Agriculture and Rural Development  
Walsh Fellowship  
MSc and PhD Research  
MAgrSc Environmental Resource Mgt  
MSc Food Safety & Risk Analysis  
MSc Food, Nutrition & Health  
MSc Food Business Strategy

### Career Opportunities

Business Manager  
Teacher/Lecturer  
Marketing Manager  
Farm Manager  
Journalist  
Project Management  
Production Manager  
Communications Manager

Technical Sales Manager  
Business Development Officer  
Government Official  
Policy Analyst  
Agricultural Consultant  
Quality Assurance Officer  
Market Analyst  
Stockbroker

### Conversion or Complementary Courses

Postgraduate Diploma in Education  
MSc Business Studies  
Master of Business Administration  
HDip Computer Science  
Master of Accounting

MAIN MENU

# Food Business with Chinese Studies

DN250

## Year 1 Subjects

Intro to Food and Agbus Mgmt  
Ag Economics and Business  
Mathematics  
Chemistry  
Biology  
Physics  
Chinese Language Experience  
Elementary Written Chinese  
Elementary Spoken Chinese

## Year 2 Subjects

Business Management  
Business Law  
Applied Economic Analysis  
Financial Planning and Control  
Soil Science  
Intermediate Spoken Chinese 1 and 2  
Intermediate Written Chinese 1 and 2  
Optional Modules

## Year 3 Subjects

One year Study Abroad at UCD partner university in China

## Year 4 Subjects

Food and Agribusiness Strategy  
International Food Marketing  
Agricultural Policy  
Enterprise Development  
Advanced Chinese 1 and 2  
Chinese Economy  
Doing Business in China  
Optional Modules

## BAgrSc Honours

### UCD Graduate Study

MSc Humanitarian Action  
MAgrSc Sustainable Agriculture and Rural Development  
Walsh Fellowship  
MSc and PhD Research  
MAgrSc Environmental Resource Mgt  
MSc Food Safety & Risk Analysis  
MSc Food, Nutrition & Health  
MSc Food Business Strategy

### Career Opportunities

Business Manager  
Teacher/Lecturer  
Marketing Manager  
Farm Manager  
Journalist  
Project Management  
Production Manager  
Communications Manager

Business Development Officer  
Government Official  
Policy Analyst  
Global Markets Executive  
Agricultural Consultant  
Quality Assurance Officer  
Market Analyst  
Stockbroker

### Conversion or Complementary Courses

Postgraduate Diploma in Education  
MSc Business Studies  
Master of Business Administration  
HDip Computer Science  
Master of Accounting



## UCD Agriculture and Food Science Programme Office

Agriculture and Food Science Centre, University College Dublin, Belfield, Dublin 4

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Email: [agandfoodprogrammes@ucd.ie](mailto:agandfoodprogrammes@ucd.ie)

Web: [www.ucd.ie/agfood](http://www.ucd.ie/agfood)



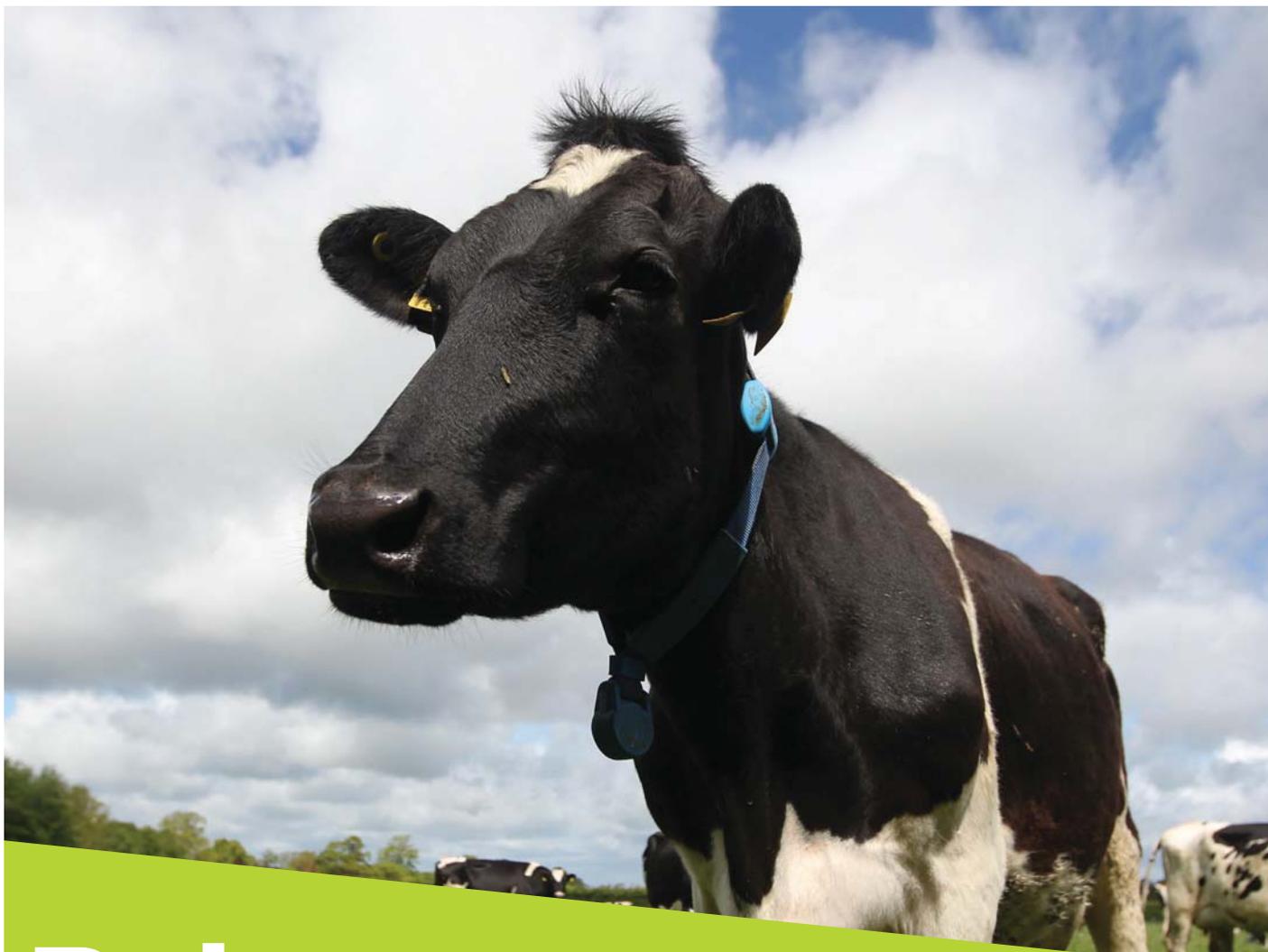
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# UNDERGRADUATE COURSES

# Dairy Business





# Dairy Business

## Why Dairy Business?

The Irish dairy industry makes a major contribution to the Irish economy adding €3.5 billion to food exports and employing approximately 18,000 dairy farmers and a further 4,000 employees at farm level, 8,500 employees in the processing industry and supporting an additional 4,500 positions in ancillary services.

The dairy industry is experiencing significant change at the present time with expansion in farm and herd size, accelerated by the abolition of quotas in 2015. Since 2013, Ireland has increased milk production by 23%. This programme is designed to equip future leaders in the dairy industry with the necessary scientific, technical and business skills to cope with this business and enterprise expansion.

DN252

## Dairy Business

### CAO Points

Average 2017 (Round 1) 470

Minimum 2017 (Round 1) 451

#### Minimum A Level:

AABb (Excluding Maths Bonus Points)

ABBc (Including Maths Bonus Points)

*\*Students should note that entry requirements and programme quotas are subject to change and students are advised to contact [www.ucd.ie/registry/admissions/er.html](http://www.ucd.ie/registry/admissions/er.html) prior to submitting an application to determine the entry requirements for a particular programme.*



## Student View

**Emma Gilsean** | Year 3

I've had an interest in farming from a young age but wouldn't necessarily have thought that my future career would lie in agriculture. That said, I knew quota abolishment was coming down the tracks which would mean a new era for the dairy industry so I decided to choose the Dairy Business programme. I wasn't quite sure what to expect from the course or career-wise, but having just completed my third year, I know I have made the right choice.



Stage 3 really was the highlight of the course for me. My classmates and I got the chance to travel to New Zealand for Professional Work Experience where I feel I can speak for everyone in saying we were all amazed by the sheer scale of the dairy industry there. In the second semester of Stage 3 we spent our time in Teagasc's Moorepark Dairy Research Centre. Here we had the opportunity to learn from the top researchers in the business and also visited farms of some of the best dairy farmers in the country.

My advice would be not to think twice about coming to UCD, I would highly recommend the course to anyone with an interest in the dairy industry. UCD is unique in how agricultural students come together like one big family, which makes your college experience so much more enjoyable.

## Student View

**Paul Tobin** | Year 4

Studying Dairy Business was a thoroughly enjoyable experience for me. I come from a dairy background although I wasn't thinking of farming full-time straight after college. I loved farming and business subjects in school and UCD offered me the best mix to further both of these interests in college. I chose Dairy Business because it offered me the practical skills needed to run a farm successfully while complementing a range of business modules that could be used to further a career in the agri-food industry.



The opportunity to complete Professional Work Experience in New Zealand is priceless and coming back to finish the year in Moorepark made Stage 3 an exceptional year in college. This course offers you the chance to work with the best in the dairy industry by learning from researchers and working with progressive dairy farmers. The journey from first to fourth year in UCD is simply unforgettable and being part of the Ag family makes it a seamless transition from secondary school to college.

For me the best part of this course is the options it presents you with at the end of the four years. I have decided to start a career as an accountant while also managing the dairy farm with my father and studying this course has given me the confidence and skills to do both. I would highly recommend this course to anyone who is looking towards a career in the dairy industry at any level. UCD offers a very high standard of education that will be recognised wherever you want to go.



## Professional Work Experience and Semester at Teagasc, Moorepark

Professional Work Experience (PWE) takes place between July and December of year three, which offers students the opportunity to travel to New Zealand during the busiest time of year in the dairy farming calendar. Students can apply the skills and knowledge gained whilst also receiving exposure to cutting edge technologies.

For semester two of third year students will attend Teagasc Moorepark Animal & Grassland Research Centre in Co Cork, studying areas which include Grassland Management and Nutrition; Dairy Systems; Applied Breeding and Fertility; Herd Health, etc. This is a unique opportunity for students to interact with leading dairy science researchers and get to grips with the practical elements of running a dairy enterprise.

# CAREER PATHWAY

## Dairy Business

DN252

### Year 1 Subjects

Animal Biology & Evolution  
 Ag Economics and Business  
 Introductory Chemistry  
 Cell & Plant Biology  
 Mathematics  
 Intro to Animal Science  
 Information Skills  
 Intro to Food & Agribus Mgmt  
 Introduction to Management  
 Business Management Simulation  
 Elective Modules

### Year 2 Subjects

Animal Reproduction  
 Soil Science Basics  
 Applied Biostatistics  
 Accounting for Non-Business Students  
 Business Law  
 Animal Nutrition 1  
 Principles of Dairy Production  
 Health, Welfare & Safety  
 Marketing: Firms, Customers & Society  
 Global Operations & SCM  
 Elective Modules

### Year 3 Subjects

**JULY-DECEMBER**  
 Professional Work Experience  
 Students encouraged to travel to New Zealand

**JAN-MAY**  
 Modules undertaken at Teagasc, Moorepark, Co. Cork include:  
 Herd Health and Milk Quality  
 Grassland Management & Applied Dairy Nutrition  
 Applied Dairy Breeding and Fertility  
 Dairy Systems  
 Dairy Business Project

### Year 4 Subjects

Farm Business Management  
 Food and Agribusiness Strategy  
 Agri-Env. Issues and Policy  
 Leadership and Change Management  
 Agricultural Policy  
 Animal Nutrition II  
 Business Strategy  
 Professional Communications  
 Exp Design and Data Analysis  
 Nutrient Management  
 Elective Modules

## BAgrSc Honours

### UCD Graduate Study

MAGRSc Sustainable Agriculture and Rural Development  
 Walsh Fellowship Research Opportunities  
 MSc and PhD Research Opportunities  
 MAgrSc Environmental Resource Mgt  
 MSc Food Business Strategy  
 MAgrSc Agricultural Extension and Innovation  
 MSc Food Safety & Risk Analysis

### Career Opportunities

|                         |                         |
|-------------------------|-------------------------|
| Farm Manager            | Communications Manager  |
| Lecturer/Teacher        | Technical Sales Manager |
| Agricultural Consultant | Scientist               |
| Marketing Manager       | Government Official     |
| Journalism              | Policy Analyst          |
| Business Manager        | Consultant              |

### Conversion or Complementary Courses

Postgraduate Diploma in Education  
 Graduate Veterinary Medicine  
 MSc Business Studies  
 Master of Business Administration  
 HDip Computer Science  
 Master of Accounting

MAIN MENU



### UCD Agriculture and Food Science Programme Office

Agriculture and Food Science Centre,  
 University College Dublin, Belfield, Dublin 4

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Agri-Environmental Sciences



University College Dublin Agriculture, Food Science and Human Nutrition

# UNDERGRADUATE COURSES

# Agri- Environmental Sciences

MAIN MENU



DN253



# Agri-Environmental Sciences

## Why Agri-Environmental Sciences?

Agriculture has an increasingly recognised global impact and responsibility for the quality of the natural environment. In turn, the security of food production systems at both Irish and global levels depends upon the quality of management of natural processes and resources in farming and food production systems. The Agri-Environmental Sciences programme is designed to equip its graduates with the knowledge and skills needed for progressive development of improved sustainability in farming and food production systems.

On completion of this specialist programme, you will have:

- A wide knowledge of the applied agricultural and environmental sciences that underpin sustainable agriculture, food production and rural land use systems
- A comprehensive understanding of rural environmental issues in Ireland, the EU and worldwide
- Practical experience of agri-environmental research through completion of a supervised final year project on your chosen topic
- Scientific and environmental management skills to contribute to future farming and land use industries, as either a scientist, consultant or policy-maker
- Interpersonal and professional skills required to follow your chosen career path.

## DN253 Agri- Environmental Sciences

### CAO Points

Average 2017 (Round 1) 440

Minimum 2017 (Round 1) 419

### Minimum A Level:

ABBe (Excluding Maths Bonus Points)

BBBe (Including Maths Bonus Points)

*\*Students should note that entry requirements and programme quotas are subject to change and students are advised to contact [www.ucd.ie/registry/admissions/er.html](http://www.ucd.ie/registry/admissions/er.html) prior to submitting an application to determine the entry requirements for a particular programme.*



## Staff Profile

**Dr Saoirse Tracy** | UCD School of Agriculture and Food Science

Dr. Saoirse Tracy is a Lecturer in Applied Plant Biology. She researches soil-plant interactions and the wider consequences they have for the environment. She is particularly interested in the zone of soil around a root we call the rhizosphere, because although it is out of sight, this interface is crucial for plant performance in the field.



She has recently set up a facility at the UCD Rosemount Experimental Research Station to use specialist techniques to look at roots in soil. A greater understanding of how plant roots interact with soils will be key to meeting some of the food challenges we face in the 21st Century. It is often said that root systems will be key to the second green revolution, so a greater understanding of what is going on belowground should help farmers' maintain yields aboveground. Dr. Saoirse Tracy teaches into several plant and soil science modules and has created new modules centred on her research area of soil-plant interactions.

## Graduate View

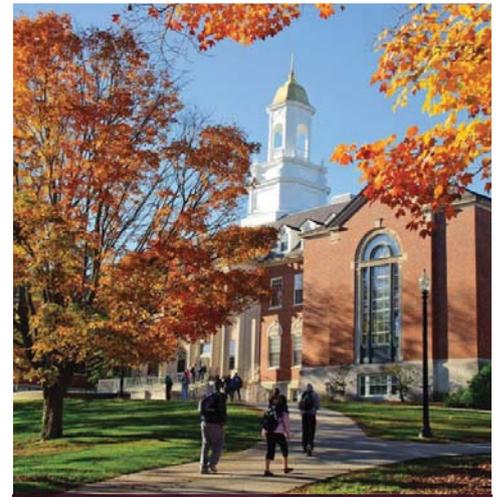
**Patricia Torpey** | Agricultural Inspector, Department of Agriculture, Food and the Marine

My decision to study Agri-Environmental Sciences at UCD meant that I could combine my love of science with my love of farming and the natural environment. I graduated in 1995 and went on to complete a PhD which was focused on the impact of agriculture on water.



I've been working with the Department of Agriculture, Food and the Marine (DAFM) for the past 18 years and the majority of that time has been spent contributing to and developing policies that improve farming efficiencies, therefore strengthening the relationship between productive farming and conservation of our water environment. These include the Nitrates Regulations, EIA (Agriculture) Regulations, agri-environmental schemes, freshwater pearl mussel conservation, agri-environmental indicators and river basin planning. I collaborate closely with many national stakeholders including Teagasc, the Environmental Protection Agency, Inland Fisheries Ireland, National Parks and Wildlife Service, a number of government departments and farming organisations; I also represent the DAFM internationally at EU and OECD levels. I recently established a 'Water Network' within the DAFM, the aim of which is to guide, co-ordinate and communicate what the DAFM and its Agencies are doing to protect and enhance water. I am involved in monitoring progress under Food Wise 2025, the vision for growth in the agriculture sector in Ireland, to ensure that we are maximising our economic competitiveness, while at the same time ensuring environmental protection.

My degree in Agri-Environmental Sciences was an important stepping stone for me to a very enjoyable and rewarding career in a key sector of Ireland's economy.



University of Connecticut

## Professional Work Experience and Study Abroad Opportunities

Five months Professional Work Experience takes place in third year of the Agri-Environmental Sciences programme. Teagasc, the Department of Agriculture, Food and the Marine, the Environmental Protection Agency, the National Parks & Wildlife Service, local authorities and commercial companies are popular destinations to conduct Professional Work Experience. In recent years, increasing numbers have opted to complete Professional Work Experience abroad.

You can study abroad for one semester, at universities including:

- University of California, USA
- University of Connecticut, USA
- University of Queensland
- Purdue University, USA
- Michigan State University, USA

There is a limited number of scholarships available, on a competitive basis, which support some of the costs associated with studying and completing Professional Work Experience abroad.

# CAREER PATHWAY

## Agri-Environmental Sciences

DN253

### Year 1 Subjects

Animal Biology & Evolution  
Introductory Chemistry  
Physics  
Mathematics  
Land Use & Environment  
Information Skills  
Cell and Plant Biology  
Intro to Biomolecules  
Intro to Food & AgBus Mgmt  
Elective Modules

### Year 2 Subjects

Diversity in the Rural Landscape  
Agricultural Botany  
Soil Science Basics  
Applied Zoology  
Agricultural Microbiology  
Principles of Animal & Crop Science  
Applied Biostatistics  
Genetics and Biotechnology  
Env Biology and Ecology  
Health, Welfare and Safety  
Elective Module

### Year 3 Subjects

Agri-Env. Issues and Policy  
Pests and Parasites  
Soil Science Applications  
Systems Ecology  
Plant Diseases: Biology  
Scientific Writing and Review  
Professional Work Experience  
Agrichemicals & Environment  
Climate, Carbon & Soil  
Elective Modules

### Year 4 Subjects

Nutrient Management  
Plant Pathology & Biotechnology  
Pest Management  
Environmental Management  
Grass and Forage Production  
Research Project  
Elective Modules

## BAgrSc Honours

### UCD Graduate Study

MSc Wildlife Conservation & Mgt  
MAgrSc Rural Environmental Conservation and Management  
MAgrSc Environmental Resource Mgt  
MSc and PhD Research  
MAgrSc Agricultural Extension and Innovation  
MAgrSc Sustainable Agriculture & Rural Development

### Career Opportunities

|                          |                         |
|--------------------------|-------------------------|
| Environmental Consultant | Technical Engineer      |
| Teacher                  | Policy Analyst          |
| Farm Manager             | Government Official     |
| Journalist               | Parks Superintendent    |
| Agricultural Consultant  | County Heritage Officer |
| Agricultural Inspector   | Scientist               |
| Lecturer                 | Science Communications  |

### Conversion or Complementary Courses

Postgraduate Diploma in Education  
MSc Business Studies  
Master of Business Administration  
HDip Computer Science  
Master of Accounting

MAIN MENU



## UCD Agriculture and Food Science Programme Office

Agriculture and Food Science Centre,  
University College Dublin, Belfield, Dublin 4  
Tel: +353 (0) 1 716 7194  
Email: [agandfoodprogrammes@ucd.ie](mailto:agandfoodprogrammes@ucd.ie)  
Web: [www.ucd.ie/agfood](http://www.ucd.ie/agfood)



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Food Science



University College Dublin Agriculture, Food Science and Human Nutrition

# UNDERGRADUATE COURSES

# Food Science



MAIN MENU

DN261



# Food Science

## Why Food Science?

Food Science focuses on the physical, chemical and biological characteristics of food along the production chain from farm to plate. If you choose to specialise in Food Science, you will develop your scientific knowledge of how to produce high quality, safe and healthy foods.

As a food scientist you will have a role to play in all aspects of the food chain from production to processing, storage and marketing. This unique degree ensures you have a broad knowledge of food production and processing, thus gaining the scope and opportunity to develop different types of food products.



The Food Science Programme at UCD is accredited by the Institute of Food Technologists.

DN261

## Food Science

### CAO Points

Average 2017 (Round 1) 487

Minimum 2017 (Round 1) 466

#### Minimum A Level:

AAAc (Excluding Maths Bonus Points)

AABd (Including Maths Bonus Points)

*\*Students should note that entry requirements and programme quotas are subject to change and students are advised to contact [www.ucd.ie/registry/admissions/er.html](http://www.ucd.ie/registry/admissions/er.html) prior to submitting an application to determine the entry requirements for a particular programme.*



## Student View

**Karina Gannon** | Year 4

If, like me, you share an interest in the food industry, in food production and innovation, then Food Science in UCD is the right course for you.

While first and second year contain a broad range of subjects, the course becomes more specific in third and fourth year, with subjects dealing closely with areas such as dairy and meat products. The work placement element of the course in third year allows students to apply the knowledge gained in the class to an actual food industry setting. Field trips to companies such as Baileys, Valeo foods and Dawn Foods supported the materials taught in class and gave students a practical setting to the theory. The Product Development module and Final Year Project allowed me to develop and work on my own ideas, which along with the mix of class-based learning and work placement, provides the essential skills and knowledge necessary for the food industry.

I would 100% recommend this programme to anyone with an interest in food production, innovation and processing as the broad range of subjects taught really cater for all aspects of the food industry.



## Graduate View

**Eimear O'Donnell** | Assistant Marketing Manager, Kerry

UCD's Food Science programme gave me the perfect foundation in science and, through practical lab sessions, made it applicable to today's innovative industry. The opportunities to select electives each semester meant I could focus on topics within food and agriculture that were of interest to me. I was interested in the area of nutrition, which is becoming increasingly important in food technology and development. Through a combination of elective modules and the core programme, I developed an understanding of the role of food in diet and health.

The School's heritage in agriculture gives you an appreciation of primary production and the foundations of food. As you progress through the degree, you will build an understanding of the composition of macro and micro nutrients. The combination of lectures, laboratory work and theoretical case studies gives you a complete understanding of where food begins, how it is formed and how it will react through different processing mechanisms.

The great link between the programme and industry becomes apparent when you complete Professional Work Experience as an integrated part of your degree. Enabling you to not only gain experience in a professional work environment and build relationships within the industry, but also to put theory into application. My placement has stood to me in my professional career since and opened my eyes to the relevance of my degree in industry.



## Professional Work Experience and Study Abroad Opportunities

A five month professional work experience (PWE) placement is integral to your Food Science degree and is an invaluable learning and networking opportunity.

You can also study abroad for one semester, at universities including:

- University of California, USA
- Cornell University, USA
- University of Queensland, Australia
- Iowa State University, USA
- Michigan State University, USA

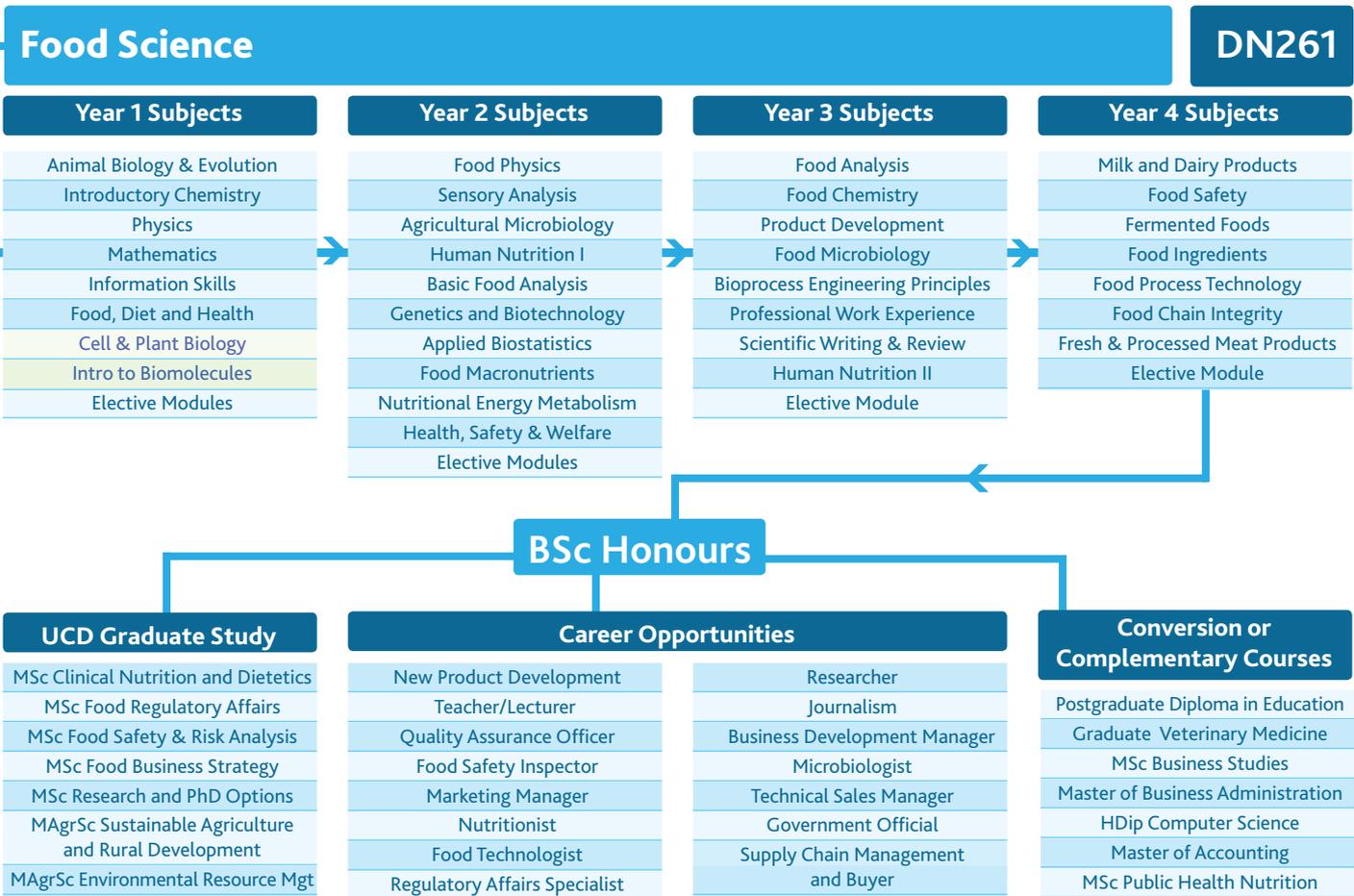
There are a limited number of scholarships available, on a competitive basis, which support some of the costs associated with studying and completing Professional Work Experience abroad.

"I was fortunate enough to spend five months on the Study Abroad Exchange Programme to Michigan State University as part of my degree, which was an incredible experience and allowed me to observe the food industry from an American perspective."

- Karina Gannon

# CAREER PATHWAY

MAIN MENU



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Human Nutrition



University College Dublin Agriculture, Food Science and Human Nutrition

# UNDERGRADUATE COURSES

# Human Nutrition



MAIN MENU

DN262



# Human Nutrition

## Why Human Nutrition?

Nutrition – the interaction between food and health – is becoming increasingly important in society. This programme covers many aspects of nutritional sciences, from biochemistry to molecular and public health nutrition, and also includes topics such as nutrition communication and food regulatory affairs.

On graduating you will be able to apply your knowledge to many different areas of the food and health industry.



The Human Nutrition Programme at UCD is accredited by the Association for Nutrition.

## DN262 Human Nutrition

| CAO                                  | Points        |
|--------------------------------------|---------------|
| Average 2017                         | (Round 1) 532 |
| Minimum 2017                         | (Round 1) 509 |
| Minimum                              | A Level:      |
| A*AAa (Excluding Maths Bonus Points) |               |
| AAAC (Including Maths Bonus Points)  |               |

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## Student View

**Brionn Coffey** | Year 3

A keen interest in health, a love for sport and the relation between the two was the seed of my desire to study Human Nutrition in UCD. One of the best things about this degree is its broad nature, since beginning I have been exposed to so many more intriguing areas of nutrition such as nutrition research, food metabolism and infant nutrition.



Everyone in the degree is really close and with only 28 students you quickly form a great group of friends. In first year you spend a lot of time with students across other faculties such as agricultural science and general science letting you meet a more diverse range of people. UCD is not as big and daunting as some make it out to be. I came from a small school of 700 students in Wexford but through the degree and involvement in the college rugby set-up, I quickly found myself spotting familiar faces around campus.

Possibly the best thing about this degree is third year, where you get to work for 10 months in Ireland or abroad. I was lucky enough to work in Danone Nutricia Early Life Nutrition in Dublin where I worked in the area of infant nutrition. During placement you get to practice the knowledge you have acquired in your previous two years studying while also developing a strong professional network and resumé. If you're like I was, searching through the CAO website and college booklets in hope of finding that perfect degree, have an interest in science or health and want to graduate from a leading university, then put this course down. You won't regret it!

## Graduate View

**Deirdre O'Shea** | Executive Director, Agri Aware

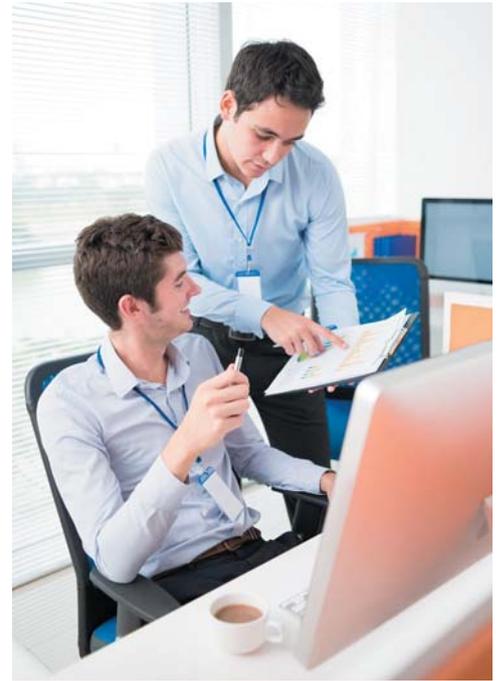
My interest and passion for food and how this food impacts on our health led me to study Human Nutrition at UCD. The course provided the opportunity to learn about a wide array of topics from food safety and regulation to clinical and public health nutrition.



As part of the Human Nutrition degree programme, the entire third year consists of work placement with the opportunity to work abroad. I spent 10 months working in a teaching hospital in Sheffield where I worked on an intervention trial investigating the impact of probiotics on the gut microflora of male volunteers. This was a great opportunity to get a flavour for working with a team of researchers and professionals in the nutrition field and gain valuable insights into career paths available to nutrition graduates.

This degree provides graduates with well-rounded expertise that can lead to a career in many diverse areas including public health, industry, research, to name but a few. Because nutrition is something that impacts all of us and we are becoming more and more conscious of how food impacts on our bodies, there is a growing demand for graduates from this discipline.

Aside from the academic education, UCD has so much to offer in terms of extra-curricular activities and certainly for me, as an avid GAA player, this was a huge highlight of my time in UCD. There are many clubs and societies to suit everyone's needs and I would strongly advise students to get involved to further enhance your experience in UCD. I would highly recommend the Human Nutrition programme in UCD for those with an interest in science, food and how food impacts on human health.



## PROFESSIONAL WORK EXPERIENCE

A year of professional work experience in third year gives you a unique opportunity to graduate with the skills necessary to enter the working world. This work placement also provides an excellent opportunity to gain practical experience and broaden your appreciation of the food industry or nutrition related employment. You can expect to find employment in national and international companies and government departments associated with the food industry or nutrition, or within world-class research groups in international or domestic universities.

"Possibly the best thing about this degree is third year, where you get to work for 10 months in Ireland or abroad. I was lucky enough to work in Danone Nutricia Early Life Nutrition in Dublin where I worked in the area of infant nutrition. During placement you get to practice the knowledge you have acquired in your previous two years studying while also developing a strong professional network and resumé."

- Brionn Coffey

# CAREER PATHWAY

MAIN MENU

## Human Nutrition

DN262

### Year 1 Subjects

Principles of Cell Biology  
Introductory Chemistry  
Physics  
Mathematics  
Microbiology  
Cell Biology & Genetics  
Human Nutrition I  
Intro to Biomolecules  
Physiology for Nutrition  
Elective Modules

### Year 2 Subjects

Food Macronutrients  
Nutrition Research Methods  
Molecular basis of disease  
Human Nutrition II  
Basic Food Analysis  
Nutritional Energy Metabolism  
Nutrition & Health  
Data Modelling for Science  
Health, Safety & Welfare  
Elective Modules

### Year 3 Subjects

One year Professional Work Experience

### Year 4 Subjects

Food Regulation  
Nutrition and Communication  
Molecular Nutrition  
Clinical Nutrition  
Food Safety  
Public Health Nutrition  
Human Nutrition Project  
Nutritional Metabolism  
Elective Modules

## BSc Honours

### UCD Graduate Study

MSc Clinical Nutrition and Dietetics  
MSc Public Health Nutrition  
MSc Research and PhD Options  
MSc Food Regulatory Affairs  
MSc Food Safety & Risk Analysis  
MSc and PhD Research Opportunities  
MEngSc Food Engineering  
MSc Food Business Strategy

### Career Opportunities

Public Health/Community Nutritionist  
Sports Nutritionist  
Management Nutritionist  
Teacher  
Scientist  
Marketing Manager  
Health Promotion

Quality Assurance  
Food Safety  
Journalism  
Lecturer  
Business Manager  
Microbiologist  
Government Official  
R&D Technologist

### Conversion or Complementary Courses

Graduate Veterinary Medicine  
Graduate Medicine  
Postgraduate Diploma Education  
MSc Business Studies  
Master of Business Administration  
Master of Accounting



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Forestry



University College Dublin Agriculture, Food Science and Human Nutrition

# UNDERGRADUATE COURSES

# Forestry



MAIN MENU

DN271



# Forestry

## Why Forestry?

Forestry is the science, art and profession of managing forests. Foresters manage and create forests in sustainable and environmentally friendly ways to provide a variety of ecosystem services including timber, biodiversity, carbon sequestration, recreation, conservation and aesthetics.

You will discover how the different components of a forest – the trees, soils, water, climate, flora and fauna interact with each other and are affected by human use. The protection and enhancement of biodiversity, soils and air quality are all highly relevant in the creation and management of forests today.

Other aspects of modern forest management which are also addressed in this programme include:

- Carbon sequestration
- Renewable energy resources
- Multifunctional forestry
- Bio-complexity
- Sustainable forest management
- Social and urban forestry
- Adaptation for and mitigation of climate change
- The conservation of genetic resources.

## DN271 Forestry

### CAO Points

**Average 2017** (Round 1) **370**

**Minimum 2017** (Round 1) **314**

#### Minimum A Level:

CCCd (Excluding Maths Bonus Points)

CCC (Including Maths Bonus Points)

*\*Students should note that entry requirements and programme quotas are subject to change and students are advised to contact [www.ucd.ie/registry/admissions/er.html](http://www.ucd.ie/registry/admissions/er.html) prior to submitting an application to determine the entry requirements for a particular programme.*



## Graduate View

**Leighton Hoban | Country Manager (Belize), Fyffes**

Despite being raised in inner city Dublin, when the time came to choose my undergraduate degree I was drawn towards a career path through forests and fields rather than office desks and filing cabinets. After some research during my final year of secondary school, I felt the UCD School of Agriculture and Food Science, particularly Forestry, appealed to me the most.

The Forestry course progressively delivers material in a way that melds the subjects seamlessly providing a solid foundation in relevant theory and practical skills at the end of the four years. From basic biology and chemistry subjects in the early years to complex GIS mapping and management theory in the final years, the array of subjects that will be taught during the course prepares you for many different career opportunities that may arise, even banana production! PWE will encourage you to go beyond your comfort zone within the college walls to a real working environment where you have to rely on your own capabilities. Through the School's many contacts and support networks, your options are limitless as to where you can conduct your PWE, with Madagascar, working for the WWF, being my chosen location.

Although the Forestry course in UCD is known for producing high calibre foresters in Ireland, the world is more accessible day-by-day and Forestry in UCD will equip you with the knowledge and skills to succeed wherever your chosen career path takes you.

## Graduate View

**Mary Clifford | Business Analyst, Coillte**

I come from a farm forestry background and have been interested in the Irish forestry industry from a young age. When it came to filling out my CAO application, Forestry in UCD was an obvious first choice. The Forestry degree covers a broad range of science and forestry based modules and prepares students for careers in forest research, forest planning, forest management, and beyond. Stage 4 of the programme was very assessment and project based and gives students a chance to carry out a research project in a specific area of your own interest. The Forestry department in UCD is a small and tightknit faculty, the help, guidance and camaraderie within the department is fantastic. When it comes to applying for jobs in the forestry industry, the degree from UCD is highly regarded.



Since graduating I have joined Coillte Teoranta's Graduate Programme. I am just completing my first rotation with Coillte as Business Analyst over harvesting and general forest operations and am due to start my new role as an Operational Forester in the coming weeks. Forestry graduates are in demand in Ireland and the industry is growing. It is a dynamic industry and the Forestry degree provides you with the qualification and opportunities to work in a vast array of roles.



Michigan State University, USA

## Professional Work Experience and Study Abroad Opportunities

A five month Professional Work Experience (PWE) placement is integral to your Forestry degree programme and is an invaluable learning and networking opportunity. Popular options include placements in Ireland, Europe and South America.

You can also study abroad for one semester, at universities including:

- University of California, USA
- Purdue University, USA
- Michigan State University, USA

There are a limited number of scholarships available, on a competitive basis, which support some of the costs associated with studying and completing Professional Work Experience abroad.

"PWE was a fantastic opportunity to gain practical hands on experience in the forest sector. My PWE provided me an opportunity to work with Coillte Teoranta here in Ireland and with the Icelandic Forest Service (Skógrækt ríkisins). A trip to the Blackforest in Germany with my class during Stage 4 was a real highlight and a brilliant opportunity to see large scale forest plantations, mills and harvesting operations."

- Mary Clifford

# CAREER PATHWAY

## Forestry

DN271

### Year 1 Subjects

Animal Biology & Evolution  
Introductory Chemistry  
Physics  
Mathematics  
Ag Economics & Business  
Trees and Forests in Ireland  
Information Skills  
Cell and Plant Biology  
Intro to Biomolecules  
Elective Modules

### Year 2 Subjects

Principles of Forestry  
Professional Forestry Practice  
Soil Science Basics  
Physiological Plant Ecology  
Tree Structure & Function  
Business Management  
Agricultural Botany  
Applied Biostatistics  
Agricultural Microbiology  
Engineering & Surveying  
Health, Welfare & Safety  
Elective Module

### Year 3 Subjects

Forest Establishment  
Forest Protection  
GIS & Remote Sensing  
Wood Science  
Silviculture of Forest Stands  
Professional Work Experience  
Forest Management  
Forest Harvesting  
GIS & Forest Sampling  
Elective Modules

### Year 4 Subjects

GIS & Forest Inventory  
Forest Management Plan  
GIS & Experimental Design  
SFM Assessment  
Forest Planning  
Research Project  
Elective Modules

## BAgrSc Honours

### UCD Graduate Study

MSc and PhD Research Opportunities  
MAgrSc Environmental Resource Management  
MAgrSc Rural Environmental Conservation & Management  
MAgrSc Sustainable Agriculture and Rural Development  
MSc Humanitarian Action

### Career Opportunities

Forester  
Teacher  
Technical Advisor  
Forest Inspector  
Forest Development Officer  
Purchasing Manager  
Operations Manager  
Harvesting Manager  
Consultancy  
GIS Analyst  
Scientist  
Entrepreneur  
Pricing Analyst  
Marketing Executive  
Government Official  
Farm Management

### Conversion or Complementary Courses

Postgraduate Diploma in Education  
MSc Business Studies  
Master of Business Administration  
Master of Accounting  
HDip Computer Science

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[ucdagfood](https://www.facebook.com/ucdagfood)

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Horticulture, Landscape and Sportsturf Management



University College Dublin Agriculture, Food Science and Human Nutrition

# UNDERGRADUATE COURSES

## Horticulture, Landscape and Sportsturf Management



MAIN MENU

DN272



# Horticulture, Landscape and Sportsturf Management

## Why Horticulture, Landscape and Sportsturf Management?

Horticulture is the art, science, technology and business of plant cultivation for human use. If you like biology or other science subjects, or you're interested in business studies, home economics or languages, then this course may be for you. It will give you an appreciation of the importance of plants for human life and well-being.

The course covers the sciences, environmental studies, business, management and communications, as well as growing food and non-food plants. Landscape & Sportsturf Management focuses on the science behind developing and maintaining Ireland's designed landscapes, golf courses, tennis courts and sport pitches.

The objectives of this degree are to give you:

- Knowledge of the growth, development and protection of plants, and use of plants for food, leisure, sports, social and environmental benefits
- An understanding of horticultural plant production systems and how their components are integrated and managed in an environmentally friendly and sustainable manner
- The skills to become a competent, competitive and confident leader who will excel in the national or global horticulture community as a professional horticulturist or horticultural scientist

## DN272 Horticulture, Landscape and Sportsturf Management

### CAO Points

Average 2017 (Round 1) 386  
Minimum 2017 (Round 1) 300

### Minimum A Level:

CCC (Excluding Maths Bonus Points)  
CCDe (Including Maths Bonus Points)

*\*Students should note that entry requirements and programme quotas are subject to change and students are advised to contact [www.ucd.ie/registry/admissions/er.html](http://www.ucd.ie/registry/admissions/er.html) prior to submitting an application to determine the entry requirements for a particular programme.*



President of UCD, Professor Andrew J Deeks speaking at UCD Rosemount Environmental Research Station Open Day in 2017

## Employer View

Andrew Wilson | Managing Director, Keelings Farms



At Keelings we grow in excess of 4 million kilograms of soft fruit, Apples and Stone Fruit every season, under some of the most sophisticated growing systems in Europe. The complexity and rapid change requirements to our production methodologies, in order to keep up with the changing market requirements are both challenging and stimulating. As leaders in the field, we are constantly researching, travelling and asking questions in regard to developing and maintaining best practice. The UCD Horticulture degree is the first stop for any new recruitment opportunities and a completed UCD degree qualification is a substantial competitive advantage in any recruitment process. Wherever possible, we like to recruit trainee management and staff that have a solid, professional educational grounding in horticultural and business practice. This facilitates a reduction in potentially costly mistakes, there is less need for extensive internal training, but most importantly, our recruits are pre-gearred for additional responsibility. If you have the interest and qualification, we have the challenges.

## Student View

Yang Shen | Year 4



University College Dublin is a time-honoured university with a high international reputation. As there are students from all over the world, I feel I have benefitted from the multi-cultural atmosphere as an international student. Besides this, I think it was a good choice to study an agriculture-related subject in Ireland. Horticulture is a complex subject concerning botany, agriculture and business, as well as art and architecture relating to the landscape. From studying this programme I have learned a wide range of knowledge which enables me to work in fields like landscape design and management, food production and food business, and plant science. As people are paying an increasing amount of attention to human wellbeing, I think it has been beneficial to study horticulture as it meets the needs both mentally (landscape) and physically (food production) of society.

The excellent modules in this programme will make you a professional in the horticultural field. Apart from classroom-taught modules, I have benefitted from field trips, which enabled me to get in touch with the food production industry including vegetables, fruit and mushrooms, etc. Both students and lecturers are friendly in the School of Agriculture and Food Science and I enjoyed the atmosphere. Overall, UCD provides a good learning experience and plenty of social activities, which will surely give you a colourful college life.



The majority of our graduates become professional horticulturists. The HLSM degree is a recognised qualification by the Chartered Institute of Horticulture for



Texas A & M University

## Professional Work Experience and Study Abroad Opportunities

A five month professional work experience (PWE) placement is integral to your Horticulture, Landscape and Sportsturf Management degree programme and is an invaluable learning and networking opportunity. Popular options include placements in Ireland, Europe, North and South America, New Zealand and Australia. You can also study abroad for one semester, at universities including:

- University of California, USA
- Cornell University, USA
- Iowa State University, USA
- University of Maryland, USA
- Texas A & M University, USA

There are a limited number of scholarships available, on a competitive basis, which support some of the costs associated with studying and completing Professional Work Experience abroad.

# CAREER PATHWAY

## Horticulture, Landscape and Sportsturf Management

DN272

### Year 1 Subjects

Animal Biology and Evolution  
Introductory Chemistry  
Physics  
Mathematics  
Ag Economics and Business  
Plants and People  
Cell and Plant Biology  
Intro to Biomolecules  
Elective Modules

### Year 2 Subjects

Fundamentals of Horticulture  
Business Management  
Soil Science Basics  
Physiological Plant Ecology  
Agricultural Botany  
Engineering and Surveying  
Agricultural Microbiology  
Food Macronutrients  
Agricultural Biochemistry  
Health, Welfare and Safety  
Elective Modules

### Year 3 Subjects

Plant Protection - Pests  
Soil Science Applications  
Elements of Landscape Design  
Landscape Trees and Shrubs  
Sportsturf Construction  
Landscape Management  
Plant Diseases: Biology  
Horticulture Seminar  
Scientific Writing and Review  
Professional Work Experience  
Elective Module

### Year 4 Subjects

Applied Biostatistics  
Fruits, Vegetables & Protected Crops  
Nursery Production & Management  
Sportsturf Management  
Enterprise Development  
Professional Communications  
Research Project  
Elective Module

## BAgrSc Honours

### UCD Graduate Study

MSc and PhD Research Opportunities  
MAgrSc Sustainable Agriculture and Rural Development  
MSc Humanitarian Action  
MAgrSc Environmental Resource Management  
MAgrSc Rural Environmental Conservation & Management  
MSc Food, Nutrition and Health

### Career Opportunities

Entrepreneur  
Technical Advisor  
Quality Assurance Inspector  
Sportsturf Consultant  
Scientist  
Researcher  
Management  
Teacher/Lecturer  
Horticulture Production, Logistics and Retail positions

### Conversion or Complementary Courses

Postgraduate Diploma in Education  
MSc Business Studies  
Master of Business Administration  
Master of Accounting

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