



UCD
Agri-Food and the Environment



Choose a subject that interests
you... Choose a lifestyle...
Choose a career path... Choose a
programme that can make it happen.

BAgrSc Honours Degree Programmes



Interested in playing a part in Ireland's largest indigenous industry, which exports more than €7 billion annually? Fancy a career as a senior manager in a major organisation or financial institution? Interested in developing a range of innovative food products? Considering an outdoor career working with the environment? Or as a journalist? Or in running your own business? Inspired by the Equine Industry, Horticulture, Engineering or Technology? Motivated by a career working with animals? If so you will be following in the footsteps of graduates from our degree programmes. Or at this stage do you want to follow your interests in a programme noted for being student friendly while at the same time committed to the pursuit of excellence in its teaching programmes in Ireland's leading university?

Our exciting range of degree programmes cover a wide variety of different modules offering you a broad choice of lifestyle and career path. Each of the 9 BAgSc honours degree programmes are completed over four years with structured learning outcomes and include dedicated professional work experience opportunities. As well as providing technical knowledge in specialised areas, all programmes are designed to develop graduates who are creative, critical thinkers and problem solvers, who are life long learners and equipped with IT, communications and interpersonal skills. As part of the UCD Horizons programme you will have complete control over the selection of your elective modules in any area of your choosing. You should also note that the third language requirement for entry to the BAgSc degree programme is no longer required.

For detailed information on programme content, programme objectives or career opportunities, browse through this booklet, log on to www.ucd.ie/horizons or call the UCD Agricultural Science and Veterinary Medicine Programme Office (01 7167194).

If you want to study interesting areas, meet a diverse group of people, be thought by leading experts, be part of a proud heritage and have broad career opportunities then our honours BAgSc degree programme offers you just that!

Professor Alex Evans - Chair Agricultural Sciences Programme Board

Our Honours Degree Programmes

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Food Science

Interested in food, nutrition and what you eat?
Want to develop new food products? Then feed
your mind with a degree in Food Science!

Introduction

Food Science focuses on the physical, chemical and biological characteristics of food along the production chain from farm to plate. This degree programme develops your scientific knowledge on 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.

Our Honours degree programme is unique in that it ensures you have a broad knowledge of food production on-farm and thus the constraints and opportunities for developing different types of food products. General modules include nutrition, food chemistry and microbiology with specific modules on individual food products and new product development.

Entry route:

Direct entry	(DN040) or
Omnibus entry	(DN010)
Duration of the Programme:	4 years
Degree:	BAgrSc (Food Science)
Required subjects:	Irish
	English
	Mathematics
	One laboratory science subject
	Two other recognised subjects

Career Opportunities

It is no understatement that as a graduate of this degree programme you will have excellent employment prospects both nationally and internationally. Our graduates can work in areas such as: production management, food quality, food safety, new product development and research, nutrition, sales and marketing, and processing technology.

Employers range from the major international corporations to small and medium size enterprises, who are involved in all areas of the food sector, including convenience foods, beverages, baked products, food ingredients, meat/dairy products and fresh fruit/vegetable production.

Programme Objectives

Our degree programme is designed to help you acquire:

- an understanding of foods, the food industry and the underlying sciences;
- an understanding of food production and processing systems and how the components are integrated and managed in a sustainable manner (the 'Farm to Fork' concept);
- an understanding of all aspects of food safety, quality and nutrition, the context in which the Irish food industry operates, and its relevance in the European and world-wide provision of safe, healthy foods;
- an ability to contribute to all aspects of the food industry from production to product development and from processing through to marketing.

As well as providing you with the principles, knowledge and skills directly related to Food Science, this degree programme is also designed to develop your transferable skills, such as:

- the ability to think analytically, solve problems, and be creative; and
- a range of information technology and communication skills plus interpersonal and professional development skills which can be used in many areas of professional employment.

Programme Content

First year is focused on understanding the core sciences. There is also a food diet and health module, which gives you a flavour of the degree in the following years.

Second year covers the applied sciences required for food science such as agricultural chemistry, microbiology, food physics and food analysis as well as elective modules to develop and customise your degree programme.



Third year concentrates on the major food science modules including: nutrition, food chemistry and food microbiology. The final year is a products based year with modules on the technology and chemistry of meat, milk and dairy products and specialised modules on food ingredients and marketing.

Throughout the programme, you start to get direct experience of food production and processing techniques through sensory analysis (year 2), a product development exercise (year 3), a research project (year 4) and, of course, Professional Work Experience.

It is important that you study the course syllabus before making your final choice; copies can be found on our website (www.ucd.ie/agandvet) or requested from UCD Agricultural Science & Veterinary Medicine Programme Office.

Professional Work Experience

Ten weeks Professional Work Experience is an integral part of the programme and takes place within food related businesses during the summer of third year. Not only does this help you develop your skills but it also allows you to develop contacts in the sector, which can lead to employment following graduation.

Facilities

Food Science is superbly equipped in the area of food manufacturing with world class wet and dry processing laboratories and excellent sensory analysis facilities. There are also quality control, food microbiology and food physics labs and extensive student computer facilities.



Eve Galvin
BAgrSc Food Science

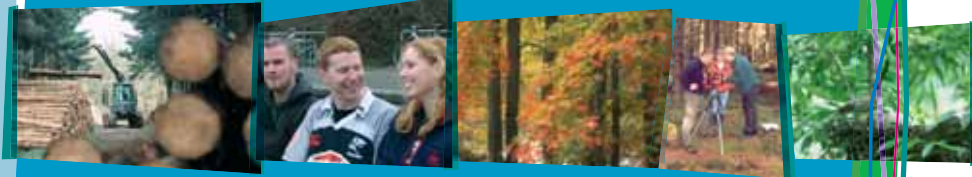
As I liked science and the nutritional aspects of home economics in secondary school, I thought food science was a degree programme that might suit me. Although not

totally sure about my decision when I started four years ago I am sure now that food science in UCD was the best choice and would equally be a good choice for anyone with an interest in science. I thoroughly enjoyed the programme, particularly the dairy

chemistry and food product development modules.

In Stage 3, I had the opportunity to study for one semester at Purdue University, Indiana. This was not only a great cultural experience but I also had to adapt to a new system of learning which I found effective and hence enhanced my interest in food science.

There's a great atmosphere in Food Science. Everyone's really friendly and there are loads of social events to keep you going.



Forestry

Interested in an outdoor career, the environment, forests and wildlife? Then read on to find out more about our forestry degree programme.

Introduction

Forestry is the art and science of managing forests for the benefit of all living things. Currently 9% of Irish land is under forestry and the overall objective of the state is to increase this to 17% by 2030.

Our forestry degree programme has a long and prestigious heritage having educated many leading foresters both in Ireland and

abroad since it started in 1927. As a forestry student you will learn how to manage forests in environmentally sound ways. You will also understand how the different components of a forest; the trees, soils, water, climate and wildlife, interact with each other and are affected by human requirements.

Entry route:

Direct entry	(DN042) or
Omnibus entry	(DN010)
Duration of the Programme:	4 years
Degree:	BAgrSc (Forestry)
Required subjects:	Irish
	English
	Mathematics
	One laboratory science subject
	Two other recognised subjects

Career Opportunities

A degree in forestry opens up many different career paths both within and outside of the forestry sector. Our graduates find themselves working in all areas of the forestry industry including both the public and private sectors, manufacturing industries, management companies, environmental agencies, advisory/consultancy firms and forestry research and education.

The broad education and transferable skills (IT, communications, problem solving) you receive from the degree are traits that employers in other sectors also want. Graduates have gone into a wide range of other areas including the financial services and insurance sectors, natural resource management, nature conservation, information technology and land use planning.

Programme Objectives

We are committed to providing you with an optimal learning environment. We use a wide range of teaching and learning methods, such as lectures, small-group teaching, seminars, field exercises, problem-based learning, laboratory sessions, tutorials, excursions, and individual and group projects. Our aim is to enhance your overall learning experience and to help you perform to the best of your ability.

The objectives of the Forestry programme are to:

- equip you with the education and skills to enable you to provide leadership within the forestry profession;
- help you develop an overall view of forests with regard to their ecological, economic, socio-cultural, environmental and utilisation functions;
- provide you with the scientific basis for the balanced management of the forest resource that is consistent with the principle of sustainability;
- help you develop the ability to think analytically and provide you with the knowledge necessary for professional decision-making in forestry and related enterprises;
- equip you with skills in the areas of computer applications, information technology, communications, and professional development. These skills will be useful in many areas of employment.

Programme Content

This four-year programme consists of a blend of biological, management and utilisation modules. First year, taken in common with the other BAgSc degree programmes, includes a full range of core science subjects as well as an introduction to forestry module.

Second year continues your introduction to forestry with modules such as fundamentals of forestry, forest mensuration and biometrics and principles of silviculture (growing trees).



In third year, silviculture of forest stands, forest protection and wood science build on the foundations of biological sciences to give a greater understanding of forest ecosystems. In addition, forest management, forest inventory and biometrics and harvesting modules are introduced as a basis of the forest utilisation component of the programme.

Familiarisation with a wide range of computer techniques forms another important aspect of the programme.

In fourth year considerable emphasis is placed upon individual and group projects, these form the major component of your marks towards your degree rather than a final examination.

In both the third and fourth years there are opportunities to travel abroad for a semester or as part of your project work or for your Professional Work Experience.

It is important that you study the course syllabus before making your final choice, copies can be found on our website (www.ucd.ie/agandvet) or requested from UCD Agricultural Science & Veterinary Medicine Programme Office.

Professional Work Experience

This is an important element of the degree and allows you to apply your knowledge and further develop your skills. You undertake five months Professional Work Experience from April to September of the third year.



Tara Ryan
BAgrSc Forestry

Having completed a National Diploma in Science specialising in Forestry (WIT), I began the final two years of the forestry degree programme at UCD in 2004. Along with adding

to my fundamental knowledge of forests and the forest industry, the course greatly increased my proficiency in the use of geographic information systems, information and communication technologies and enabled me to develop competencies such as writing scientific papers.

Professional work experience forms part of the Stage 3 syllabus and this is one of the most beneficial areas of the course. The course facilitated the completion of all electives and exams by Christmas of Stage 4 allowing me to concentrate solely on the final year project in the final term.

The forestry degree programme has equipped me well for the future and I will always remember this great chapter of my life as I embark on a career in the forestry industry.



Food & Agribusiness Management

Like business and science? Can't choose between them? Why not study for a degree that combines both and develops your specific knowledge of Ireland's largest indigenous industry?

Introduction

This programme combines business and economics with the technology and science of the agri-food sector. This is an important part of the Irish economy, accounting for about 8.4% of Gross Domestic Product (GDP), €6.7 billion in exports and 9.5% of total employment.

The degree programme develops your skills and knowledge for managerial and professional careers in the food production chain and the businesses and organisations that serve it. This extends from supply of raw materials to agriculture, through farm production, to the processing and marketing of food products, including the many private and state organisations that serve the agri-food industry.

Entry route:

Direct entry	(DN043) or
Omnibus entry	(DN010)
Duration of the Programme:	4 years
Degree:	BAgrSc (Food & Agribusiness Management)
Required subjects:	Irish
	English
	Mathematics
	One laboratory science subject
	Two other recognised subjects

Career Opportunities

Sectors in which our graduates typically find employment include food processing, distribution and marketing; co-operatives, banks and other financial services; food and farm business advisory and consultancy services; farm supply industries; agri-food media (print, radio and TV); state bodies; representative organisations; research; and professional and owner management of farm businesses.

Initially you may enter jobs such as; production managers, technical and commercial representatives, product managers, PR executives, farm business consultants, banking executives, research officers and government officials. We have an impressive list of past graduates who have reached senior positions as chief executives, board members and business owners, plant and division managers, marketing managers and media editors.

Programme Objectives

This degree programme is designed to help you acquire an understanding of:

- the principles of economics and business management and how these apply to farming and food production and marketing;
- how the Irish and international food system delivers food products and services that people want and that farmers and food manufacturers can produce economically;
- the agricultural and food sciences necessary for the efficient management of farm businesses and of food processing and marketing;
- the impacts of farming and food manufacture on the natural environment.

As well as providing you with the principles, knowledge and concepts of Food and Agribusiness Management, the degree programme provides the opportunity to:

- think analytically, solve problems, and be creative;
- develop your interpersonal and written communication skills;
- learn how to conduct economic, business and financial analysis; and
- work with modern computer, e-business and internet systems.

Programme Content

First year introduces you to the world of food production and marketing and provides foundation material in food and agricultural economics, basic sciences and analytical techniques.

Second year builds your business knowledge with modules in business management, business law, applied economic analysis as well as modules on crop and animal production systems.



Third year concentrates on human resource management, farm business management, food and agribusiness marketing, computer analysis, and food quality and safety assurance.

In your final year, you study modules such as: agricultural marketing and trade, food and farm input marketing, agricultural policy, written and oral communications, and IT and e-business.

It is important that you study the course syllabus before making your final choice; copies can be found on our website (www.ucd.ie/agandvet) or requested from UCD Agricultural Science & Veterinary Medicine Programme Office.

Professional Work Experience (PWE)

The Professional Work Experience programme of five months in the food and agribusiness industry or related sectors is an integral part of your degree programme and takes place in the spring/summer period of third year. This helps you build your skills, apply the knowledge you have learnt and in many cases can lead to employment with one of your host organisation following graduation.

There are opportunities to take your PWE abroad or a semester in third year in one of our global exchange universities.



Kerrie O'Brien
BAgrSc Food and Agribusiness Management

Food and Agribusiness Management is a brilliant programme and I would recommend it to everyone. Coming from a non-farming background I wasn't

sure what to expect, but I was well and truly settled in after the first semester.

The course combines both business and food and agricultural aspects. As part of Stage 3 we were required to complete Professional Work Experience.

This was an invaluable opportunity from which I was offered a job on completion of my degree.

During my time spent in Food and Agribusiness Management, I have met the most wonderful people who I will remember and stay in contact with for ever. Over the four years a lot of craic and banter was had with some study mixed in for a bit of variety!

It has been the best four years of my life. I wouldn't change it for the world. For anyone considering the Food and Agribusiness Management programme, I recommend it highly.



Agri-Environmental Sciences

Interested in the environment, wildlife and how we use our natural resources? Why not study for a degree in this topic and develop a rewarding career in an increasingly important sector?

Introduction

Agri-Environmental Sciences focuses on the study of how ecosystems function, their diverse components (plants, animals, water etc) and how to manage them effectively for sustainable use by current and future generations. The programme develops your scientific understanding of how land is used

(farming, forestry, development) and its impact on the natural environment. You also acquire skills in integrated agricultural management; landscape, plant and wildlife conservation; and environmental planning and assessment.

Entry route:

Direct entry	(DN044) or
Omnibus entry	(DN010)
Duration of the Programme:	4 years
Degree:	BAgrSc (Agri-Environmental Sciences)
Required subjects:	Irish
	English
	Mathematics
	One laboratory science subject
	Two other recognised subjects

Career Opportunities

Upon graduating, you will have the scientific skills and knowledge base to give you a competitive edge in a rapidly expanding area. Our graduates work in a whole range of roles including researching, implementing and monitoring of environmental programmes at company, local, national and EU level.

Typical employers include state and local government agencies (EPA, Department of Agriculture and Food, Teagasc, County Councils etc), educational and advisory organisations, co-operatives and agri and other businesses.

Programme Objectives

This degree programme is designed to help you acquire:

- an understanding of environmental science and environmental management, based on sound scientific principles;
- an understanding of ecosystems and how they function, so as to be able to implement sustainable management practices;
- knowledge and skills so that you can contribute to the development and utilisation of agriculture and other forms of land use, as scientists and/or policy makers, in an environmentally informed and sensitive manner;
- an understanding of environmental issues in Ireland, in the context of agriculture and other forms of land use, and the issues in a European and worldwide context.

As well as providing you with the principles, knowledge and skills directly related to Agri-Environmental Sciences, this degree programme is also designed to develop your transferable skills, such as:

- the ability to think analytically, solve problems, and be creative; and
- a range of information technology and communication skills plus interpersonal and professional development skills which can be used in many areas of professional employment.

Programme Content

First year provides a fundamental framework in the physical, biological, economic and mathematical sciences to equip you with a strong base for your degree. In addition, a specific introductory module, land use and the environment, gives you a first taste of the programme.

In second year you will develop an understanding of the scientific basics of modern agriculture and the heritage of the rural environment so that you can be competent in dealing with farmers and other users of the land resource. Modules include applied plant biology, applied zoology and physiological plant ecology.



There are also modules on earth science, climatology and the environment, and genetics and bio-technology.

In the third and fourth years of the programme, the emphasis is on applied environmental science subjects in the context of sustainable management of natural resources. These include modules on soil and water management, environmental management, environmental impact assessment and wildlife management.

To aid your learning and development there is a major research project in fourth year and seminar presentation to classmates and staff.

It is important that you study the course syllabus before making your final choice; copies can be found on our website (www.ucd.ie/agandvet) or requested from UCD Agricultural Science & Veterinary Medicine Programme Office.

Professional Work Experience (PWE)

Between April and September in third year you undertake a period of Professional Work Experience. This is a central part of the programme and PWE allows you further your knowledge and skills in appropriate aspects of agriculture and environmental management. As well as contributing to your degree, PWE will make a valuable contribution to your CV and can lead to employment offers following graduation.

There are opportunities to study abroad in third year for a semester in one of our global exchange universities and to work abroad for your PWE.



Mark Kerrigan
BAgrSc Agri-Environmental Sciences

I am from a farming background and have always been interested in agriculture. With the current changes taking place in agriculture and the shift in emphasis from production

towards more environmental management, I thought this was the course for me.

This course provides a good knowledge of the current environmental issues, but from an

agricultural perspective, which gives you a greater understanding of how they arise.

It is a challenging course but you develop a good working relationship with your lecturers because of the relatively small class size. I am very glad I chose Agri-Environmental Sciences and the four years have passed by really quickly. I not only learned about agriculture and the environment during my years here, but also many valuable life skills and made many friends along the way.



Animal & Crop Production

Interested in working with farmers in advisory or agribusiness roles? Developing the science behind more efficient ways of rearing animals or growing crops? Consider Animal and Crop Production!

Introduction

The Animal and Crop Production degree programme provides you with a broad knowledge of agriculture relating to crops, animals and agribusiness, as well as the opportunity to study areas of interest in more detail. Your Professional Work Experience module of the programme is an important element as it allows you to develop your skills and commercial experience.

On completion of the programme you will be in a position to draw on your knowledge base and skills to analyse and interpret concepts and problems in both familiar and unfamiliar situations. Using this training, you will be capable of working professionally in many areas of agriculture as well as in the wider business, education and environmental sectors.

Entry route:

Direct entry	(DN045) or
Omnibus entry	(DN010)
Duration of the Programme:	4 years
Degree:	BAgrSc (Animal & Crop Production)
Required subjects:	Irish
	English
	Mathematics
	One laboratory science subject
	Two other recognised subjects

Career Opportunities

Employment opportunities for graduates in Animal and Crop Production are consistently good, mainly due to their broad understanding of the industry, their business knowledge, and communications and IT skills.

Graduates are employed in a wide variety of areas, for example in: agribusiness (co-operatives, fertilizer companies, agri-chemical distributors, seed suppliers, feed millers, machinery manufacturers); consultancy (farm planning and development, environmental planning), semi-state and government (research, advisory, education, planning, both in Teagasc and the Department of Agriculture and Food); financial services and the media (print journalism, radio and television).

The Animal and Crop Production programme is also very suitable if you intend to pursue a farming career or combine a different professional career with part-time farming, a lifestyle choice that is likely to increase in the future.

Programme Objectives

The undergraduate degree programme is designed to enable you acquire:

- knowledge of the growth, development and improvement of farm animals;
- knowledge of the growth, development and improvement of crop plants;
- knowledge of the agribusiness industry and the internal and external factors influencing it;
- the capacity to draw on this knowledge base to formulate animal and crop production systems that are economic and sustainable;
- the ability to think analytically, to make decisions and to be creative;
- the capacity for life-long learning so as to remain knowledgeable of evolving technical, economic, policy and regulatory frameworks;
- communication and technology skills that are applicable to many areas of professional employment.

Programme Content

The Animal and Crop Production degree programme is distinctive in that it develops an understanding of the science and business of crop and animal production and their interactions in an environment that is constantly changing due to technology, economics and social and agricultural policy.

First year concentrates on the core sciences and provides an opportunity to undertake project work in which you explore areas of animal and crop production.

In subsequent years, modules studied range from relevant applied sciences (such as soil science, microbiology) to intensive study in the areas of animal husbandry, crop



husbandry, farm business, agricultural policy and communications. You can also choose modules that interest you and are important for your career development. There are opportunities to study abroad in the first semester of third year.

It is important that you study the course syllabus before making your final choice; copies can be found on our website (www.ucd.ie/agandvet) or requested from UCD Agricultural Science & Veterinary Medicine Programme Office.

Professional Work Experience (PWE)

The eight-month period of Professional Work Experience is a fully recognised component of the degree and is undertaken from January of the third year. You gain experience on farms, in research or in agri-business related areas. Part or all of your PWE can be taken abroad. Your programme is drawn up in consultation with your supervisor and takes into consideration your previous experience in agriculture.



Aidan Fallon
BAgrSc Animal and Crop Production

I took the undenominated entry route and specialised in Animal and Crop Production in Stage 2. I found that in latter

years the subjects became progressively more focused and interesting. By Stage 4 you get to study the main animal production systems, crop husbandry and the relevant economic policies. The Stage 3 work experience allowed me the opportunity to travel to New Zealand and work

on an 1,100-head dairy farm. It was a fantastic experience to see dairy farming on such a scale. The craic and Ag social events are the best in the college. There is great camaraderie among the students throughout the years, you'll make friends for life in this course.

If you are looking for a well respected degree programme with excellent future career prospects, plenty of practical experience and the chance to have four years of constant fun, you won't find better than Animal and Crop Production.



Animal Science

Want to know more about animals? Want broad ranging career opportunities in research, production, business and advisory roles? Then Animal Science could be for you.

Introduction

Animal Science concentrates on the study of applied sciences such as genetics, animal physiology, animal nutrition and behaviour, health and welfare. These are fundamental to understanding how animals function – farm animals, companion animals and wildlife. They also underpin the principles of livestock production.

This degree is designed to equip you with the knowledge and skills necessary to provide professional leadership and technical support for the dynamic and rapidly changing animal industry, which contributes 80% of Ireland's agricultural output.

There is a large element of choice in selecting your modules within the programme, particularly in the third and fourth years. You will have the opportunity to take elective modules in many different areas and to travel to a university abroad for one semester or take some of your Professional Work Experience abroad, it's up to you.

Entry route:

Direct entry	(DN046) or
Omnibus entry	(DN010)
Duration of the Programme:	4 years
Degree:	BAgrSc (Animal Science)
Required subjects:	Irish
	English
	Mathematics
	One laboratory science subject
	Two other recognised subjects

Career Opportunities

Animal Science graduates have been highly successful in gaining employment in a wide variety of areas. These include: advisory and research; the animal feed industry; procurement, processing and marketing of animal products; teaching - both conventional second level and agricultural education; private consultancy; farming and enterprise management. In recent years, employment opportunities have arisen in both the public service and private industry and as an Animal Science graduate you are well placed to fill these posts.

The Animal Science programme is also very suitable if you intend combining a professional career with part-time farming, a lifestyle choice that is likely to increase in the future.

Programme Objectives

This undergraduate degree programme is designed to help you acquire an understanding of :

- the growth and development of farm animals, how they function, and of 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.

As well as providing you with the knowledge, skills and competencies directly related to Animal Science, the degree programme is also designed to develop your general transferable skills, such as:

- the ability to think analytically, solve problems, and be creative; and
- a range of information technology and communication skills plus interpersonal and professional development skills which can be used in many areas of professional employment.

Programme Content

Core sciences are studied in the first year as well as an optional introductory module in Animal Science. These act as a foundation for modules in the next levels.

In second year, modules taken include animal nutrition, genetics and biotechnology, applied plant biology, agricultural microbiology, agricultural chemistry, principles of animal health behaviour and welfare, applied biostatistics, agricultural ecology and pollution control and principles of crop science.



Third and fourth years deal with the following areas in more depth: animal breeding and animal genomics; animal husbandry; animal nutrition; food microbiology; and animal physiology. You also have an opportunity to select from a wide range of modules depending on your interests or career focus.

It is important that you study the course syllabus before making your final choice; copies can be found on our website (www.ucd.ie/agandvet) or requested from UCD Agricultural Science & Veterinary Medicine Programme Office.

Professional Work Experience

A five-month Professional Work Experience placement is an integral component of the degree programme and takes place following the spring break of third year. This may be taken, for example, as a combination of on-farm, agribusiness and research centre placements. Some of this may be taken abroad as part of our student exchange programmes. Previously students have gone to America, New Zealand, Australia and continental Europe.



Naomi Smith
BAgrSc Animal Science

I love animals and have always wanted to work with them. A graduate of this programme told me of the wide range of careers that it could lead to and that it was not just about farming. This suited me

as I didn't know exactly what I wanted to do, so a broad degree programme was a good option.

I have had a fantastic time and made loads of friends from all over Ireland. The small classes are

great as you get to know people, which is important as it is a bit scary coming to college at first.

Animal breeding and reproductive physiology have really interested me and my long-term aim is to work with endangered species. For the Professional Work Experience module I went to New Zealand to work on a 2,000-hectare dairy, beef and swine farm on the South Island.

I would definitely do it all again if I had the chance. I will be sad to leave once we graduate!



Engineering Technology

If you are interested in farm machinery, mechanisation or technology in general, this degree programme could be for you and open up a wide range of career opportunities.

Introduction

Engineering Technology covers the broad areas of mechanisation, environmental protection and processing in the agri-food and related industries. As a graduate you will have an understanding of these

processes; environmental issues and how to monitor and control them; and business management practices. You will also have developed your communication, IT and interpersonal skills.

Entry route:

Direct entry	(DN047) or
Omnibus entry	(DN010)
Duration of the Programme:	4 years
Degree:	BAgrSc (Engineering Technology)
Required subjects:	Irish
	English
	Mathematics
	One laboratory science subject
	Two other recognised subjects

Career Opportunities

Graduates in Engineering Technology can expect to find lucrative and challenging employment in the agri-food and related industries, including biofuels, forestry, environmental protection, etc. Typical job activities include roles as technical engineers and managers in production, manufacturing, equipment selection, environmental protection, energy utilisation, food processing, and information technology. For example you may be employed within food processing companies, consulting organisations, environmental protection agencies, and equipment design and manufacturers.

Programme Objectives

This degree programme is designed to help you acquire an understanding of:

- how engineering sciences are used for development of mechanisation technologies, environmental protection technologies and bioprocess technologies;
- the technology used to produce, harvest, process preserve and distribute biological products (plant and animal), all managed in an environmentally friendly and sustainable manner;
- Irish, European and worldwide application of engineering technology for bioprocess industries.

As well as providing you with the principles, knowledge and skills directly related to Engineering Technology, the degree programme is also designed to help you develop transferable skills, such as:

- the ability to think analytically, solve problems, and be creative;
- application of information technology and communication skills; and
- interpersonal and professional development skills which can be used in many areas of professional employment.

Programme Content

The programme is based on a core of agricultural and engineering science subjects in the first and second years. These include principles of engineering, computer and manufacturing technology, principles of crop science and food technology.

The third and fourth years of the programme specialise in Engineering Technology and a range of options are provided from which you may choose.

Mechanisation Systems Technology - involving the manufacture and utilisation of equipment and systems employed in the production of crop materials including harvesting, handling, precision technology, geographic information systems (GIS), global positioning systems (GPS) and information technology.



Environmental Protection Technology - involving sustainable development and environmental protection including integrated pollution control, waste management and recycling, building services, and management systems to protect the natural environment.

Bioprocess Technology - involving the selection and utilisation of equipment and processes across a broad spectrum of bioprocess and food industries.

There is also an opportunity to take additional modules from different programmes in the university depending on your area of interest. You will also undertake a major project in an Engineering Technology topic.

In third year you may spend one semester at Iowa State University, Michigan State University or Purdue University in the USA.

It is important that you study the course syllabus before making your final choice; copies can be found on our website (www.ucd.ie/agandvet) or requested from UCD Agricultural Science & Veterinary Medicine Programme Office.

Professional Work Experience

Professional Work Experience is recommended as part of the major project which extends through third and fourth year. In order to complete the project you will have to work and gather data from the particular sector your project covers.

International Recognition

The Engineering Technology degree at UCD has been formally designated by the prestigious American Society of Agricultural Engineers as a recognised programme. Graduates in Engineering Technology are also eligible for associate membership of The Institution of Engineers of Ireland.

John Finegan, BAgSc Engineering Technology

I'm from a farming background and was interested in agricultural and environmental engineering so I chose the Engineering Technology programme in UCD.

There is a good mix of mechanical engineering, food processing and environmental engineering in this programme. You also acquire advanced IT skills with modules like Geographic Information Systems/Mapping and AutoCAD/Design. I particularly enjoyed the environmental modules and I completed work experience during the summer with the environmental department in my local

county council. In the future I'd like to work as an environmental engineer or as a consultant in this sector.

The classes are relatively small so you develop close friends over the four years. The staff are extremely approachable and will help you with any problems you encounter along the way. The programme is recognised by Engineers Ireland so it is very well established within the discipline of engineering. I really enjoyed the programme and would certainly recommend it to anyone interested in this field.



Horticulture, Landscape & Sportsturf Management

Interested in Horticulture? You might think that it's just about gardening, but you'd be wrong! How about Sportsturf and Landscape Management, Floriculture or Social Horticulture?

Introduction

Horticulture is the art and science of plant cultivation for human use. It is a topic that covers a vast and interesting range of subjects, including all of the sciences, plant protection (pests and diseases), environmental studies, business, management and communications, and of course growing plants. This degree offers a huge variety of career paths for those of you interested in working indoors or outdoors.

With this degree you can choose the area you would like to concentrate on, pure horticulture or the management of plants in the landscape or the sportsturf industry.

Sport and leisure has become very important in everyone's lives. You could work and play at the same time with a career in the €750M sportsturf sector. By studying **Sportsturf Management** you could develop and maintain one of the 400 golf courses or thousands of tennis, football, rugby, bowling and other sports pitches in Ireland.

If you like helping other people and you have felt the joy of sowing seeds and nurturing plants as they grow, you can combine these and study **Social Horticulture**. This area of horticulture studies the interaction between humans and plants and how you can use this knowledge to improve the lives of people.

Entry route:

Direct entry	(DN048) or
Omnibus entry	(DN010)
Duration of the Programme:	4 years
Degree:	BAgrSc (Horticulture, Landscape & Sportsturf Management)
Required subjects:	Irish
	English
	Mathematics
	One laboratory science subject
	Two other recognised subjects

Introduction (continued)

If food production is your interest or if you are concerned about globalisation and its impact on food supply, safety and quality then you can study **Fresh Produce Production**.

Or if you are interested in growing plants then you can study **Nursery and Ornamental Plant Production**. With the continuing dramatic increase in house building, road construction and other projects, the demand for plants, both for indoors and outdoor landscapes has exploded. If you are interested in

management, then **Garden Centre or Landscape Management** may be your specialist area. These sectors are valued in excess of €500M annually.

If you are interested in an international career, using your French or Spanish language skills, then a career in **Floriculture** may be what you want? This sector produces and supplies flowers and pot plants valued at over €35M, which are sourced from all over the world, including countries such as Kenya, Israel, Bolivia, Columbia or South Africa.

Career Opportunities

All the above business sectors need highly trained individuals in management, technical advisory and consultation roles, research, quality assurance, sales and marketing positions. You will be either working for the emerging large corporate companies active in this area or within your own business.

Programme Objectives

This degree programme is designed to help you acquire:

- an appreciation of the importance of plants for human existence;
- knowledge of the growth, development and protection of plants and the use of plants for food, leisure, sports, social and environmental benefits;
- an understanding of the art and science of plant cultivation for human use;
- an understanding of horticultural plant production systems and how their components are integrated and managed in an environmentally friendly and sustainable manner;
- knowledge of the horticulture, landscape and sportsturf industries in Ireland, the context in which they operate, and their relationship to such industries in Europe and worldwide.

In addition to providing you with the principles, knowledge and skills directly related to the degree, it is also designed to help you develop your transferable skills, such as:

- the ability to think analytically, solve problems, and be creative;
- enhanced leadership skills; and
- a range of information technology and communication skills plus interpersonal and professional development skills which can be used in many areas of your future professional career and social life.



Programme Content

First year is designed to ensure you have a good knowledge of the core sciences. There is also an introduction to Horticulture, Landscape and Sportsturf Management module.

Second year covers the applied sciences such as soil science, agricultural chemistry and applied plant biology as well as modules in business, engineering and surveying.

Your third and fourth years cover the core modules including nursery/garden centre management, vegetable production, pomology, molecular crop breeding, landscape management, and landscape and turfgrass management. There is also a major project and elective modules to select.

It is important that you study the course syllabus before making your final choice; copies can be found on our website (www.ucd.ie/agandvet) or requested from UCD Agricultural Science & Veterinary Medicine Programme Office.

Professional Work Experience (PWE)

This is an important element of your degree and gives you the opportunity to further develop your skills in a real life environment. Five months PWE is taken in your area of interest between the third and fourth years of your degree. There are opportunities to travel abroad for your PWE or take a semester in another university through our exchange programme.

Sean Owens
BAgrSc Horticulture, Landscape & Sportsturf Management

When I was doing my leaving cert, I liked science subjects but I knew I didn't want an ordinary office job, so I picked the Undenominated Entry.

In Stage 2, I specialised in Horticulture, Landscape and Sportsturf Management. I had an interest in landscaping from working during the summers but I still enjoyed my science subjects.

In Stage 3, I was given the opportunity to study in Michigan State University and it was an experience I'll never forget. I met people from all over the world and made some of my best friends there. I got to travel and see different parts of the world. I even got to experience spring break in Mexico.

The people here in Agriculture and UCD are great craic. I'd love to be starting all over again. The social life is the thing I'll miss the most when I graduate.



Animal Science - Equine

If you are particularly interested in pursuing a qualification in animal science that focuses on equine studies, then this brand new degree programme could be for you!

Introduction

Animal Science-Equine is a new and exciting degree programme option focused on the study of applied sciences relating to animals such as animal genetics, physiology, nutrition and behaviour, health and welfare, with an emphasis on the equine species.

These are fundamental to understanding how animals function, grow and interact with their environment and underpin the principles of equine husbandry.

Entry route:

Direct entry	(DN049) or
Omnibus entry	(DN010)
Duration of the Programme:	4 years
Degree:	BAgrSc Animal Science – Equine
Required subjects:	Irish
	English
	Mathematics
	One laboratory science subject
	Two other recognised subjects

Career Opportunities

Traditionally, Animal Science graduates have been highly successful in gaining employment in a wide variety of areas including:

- Advisory and research
- Animal feed industry
- Procurement, processing and marketing of animal products
- Teaching
- Private consultancy
- Farming
- Enterprise management.

With a degree in Animal Science-Equine you will have a significantly greater likelihood of employment in the above areas where a specialty knowledge in equine science is required, and in the horse industry in Ireland, be it the thoroughbred, sport horse or racing industry.

Programme Objectives

The degree is designed to equip you with the knowledge and skills necessary to provide professional leadership and technical support for the dynamic equine industry.

In particular, the objectives of this degree programme are to give you knowledge on:

- the growth and development of farm animals, how they function and their behaviour and welfare, with emphasis on the equine species
- how the various components of the equine industry are integrated and managed
- the equine industry in Ireland, the context in which it operates and its relationship to animal industries in Europe and worldwide
- equine husbandry, breeding and nutrition, including equine exercise physiology.

Programme Content

Stage 1 concentrates on the basic sciences that form a necessary foundation for the modules that will come in subsequent years. In the following stages you will take a wide variety of courses covering areas such as:

- Genetics and Biotechnology
- Animal Nutrition
- Animal Breeding and Reproduction
- Anatomy
- Equine Husbandry
- Equine Physiology
- Farm Business Management
- Operations and Personnel Management.

Further information on the Animal Science – Equine syllabus will be available at www.ucd.ie/agandvet



Professional Work Experience (PWE)

A five-month Professional Work Experience (PWE) placement is an integral component of your degree programme and will normally take place following the spring break in Stage 3. This will give you the opportunity to go and work in the equine industry either at home or abroad and is aimed at allowing students to put into practice what they have learned in the first three stages of the degree. It also provides a strong foundation for the courses you will take in Stage 4.





Agricultural Science (omnibus entry)

Introduction

Agricultural Science provides a framework to enable students who are interested in more than one BAgSc degree programme undertake a common first year before deciding which degree programme option is most suited to their needs. For those who enter through this route the objective is to identify the programme that interests you most, thus giving you the opportunity to pursue that programme after you complete first year.

Agricultural Science (omnibus entry) introduces increased flexibility to the BAgSc degree programmes allowing students a greater time frame to research, explore and assess the merits of each degree programme option relevant to their interests and expectations. This option may also provide a gateway to obtaining your preferred degree

programme option when you do not fulfil the direct entry requirements and as such many students will often avail of DN010 as an alternative route to their preferred BAgSc degree programme.

The choices available are:

Food Science (DN040)

Forestry (DN042)

Food & Agribusiness Management (DN043)

Agri-Environmental Sciences (DN044)

Animal and Crop Production (DN045)

Animal Science (DN046)

Engineering Technology (DN047)

Horticulture, Landscape & Sportsturf Management (DN048)

Animal Science - Equine (DN049)

Entry route:

Omnibus Entry CAO code:	DN010
Length of programme	4 Years
Degree	BAgSc (Any of the 9 BAgSc programme options)
Required Subjects:	Irish
	English
	Maths
	One Laboratory science subject
	Two other recognised subjects

Graduates' Comments

We went out and talked to some past students of our programmes. Below is just a small selection of some of the comments and the broad range of careers they are now involved in. For more see our website www.ucd.ie/agandvet



Mairead McGuinness
Member of the European Parliament
Food and Agribusiness Management

'When I started out in UCD studying for my degree, I was not sure where exactly it would lead. I had a hunch

that I would like to be a journalist, but did not know anyone in the profession. Yet after just four years studying what I regard as one of the most multifunctional degree courses on offer, I achieved my initial ambitions and started working in RTE.

My career path has moved through television, print journalism and more recently onto politics. Every day along the way I rely on the skills and understanding first developed through the programme.

I really enjoyed my time here and since I was the first woman to graduate from this programme many others have followed and succeeded in a diverse range of careers. If you have an interest in business, science and policy and how they impact on the agri-food sector, I suggest you go for it, it won't let you down.'

Dr. Finbar Mulligan
Lecturer in Animal Husbandry, Veterinary Medicine, UCD



Animal Science

'interested in horses so Animal Science was a natural choice ... it really is an education for life'

Lisa Burke
Clinical Embryologist, HARRI Clinic at the Rotunda Hospital
Animal Science



'very broad degree ... offered a very good job as a clinical embryologist working on IVF in humans.'

Terence Morrissey
Agricultural Consultant
Animal and Crop Production



'if I had not chosen this degree programme I would not be where I am today'

Paddy Breen
Dairy Farmer
**Animal and Crop
production**

'I have a specific interest in dairy farming and the programme was great for this'



Ciaran White
Technical Manager Kepak
Food Science

'when I started employment ... I hit the ground running due to the excellent level of scientific and business knowledge from this programme'



Nuala Ni Fhlatharta
Head of Forestry
Development Unit,
Teagasc
Forestry

'strongly recommend ... to anyone who would enjoy an outdoor-based, practically orientated, scientific career'



Brian Og O'Flaherty
Golf Course Superintendent,
Club Merano, Italy
**Horticulture, Landscape
and Sportsturf
Management**

'this programme gave me an excellent opportunity to combine practical field work with the latest theories and practice within golf course management'



Aine Kinsella
Concept
Development
Manager, Statoil
Europe Retail,
Norway
**Engineering
technology**



'very broad and varied in content ... enabled me to apply for a number of different jobs'

Barry O'Donoghue
Conservation Ranger, National Parks
and Wildlife Service
Agri-Environmental Sciences

'can open any door you want in the agri-environmental world'



Elizabeth Arnett
Technical Director,
RPS Group
**Agri-
Environmental
Sciences**

'equipped me with the skills to communicate environmental concepts ... for example when I managed the Race Against Waste campaign'

Eimear McGettrick
Food Scientist, Kerry
Ingredients North America
Food Science

'thoroughly enjoyed every day I spent here ... wish I could start it all over again!'





Entry Routes

There are two routes for entering our degree programmes via the CAO.

Omnibus Entry (DN010) - you take a common first year programme and choose your degree option at the end of first year (some restrictions may apply due to the number of places available). This is a good option if you are not sure which programme you wish to take in second year.

Denominated Entry (DN040/2/3/4/5/6/7/8/9) - you take many similar modules as Omnibus Entry students but directly enter your nominated programme at the beginning of first year. This option guarantees a place in your chosen programme and is a good option if you are sure of the programme you want to take.

Mature Entry

Please contact the UCD Agricultural Science and Veterinary Medicine Programme Office for information on mature entry if you will be over 23 on 1st January of the year of entry.

Scholarships

If you enter a BAgrSc degree programme with 500 points or more achieved in the Leaving Certificate examination, you may receive an entrance scholarship of €1,270 and priority access to campus accommodation.

Common First Year

All our programmes have similar first year content, which aims to give you a good foundation in the core sciences, maths and economics needed for the rest of your studies. The subjects are taught from the basis that you have not studied the subject before. There are also introductory courses to get you started with some subjects and support with tutorials to ensure that you do not encounter major problems with a subject that may be new to you.

The rest of first year is taken up with introductory courses and elective modules which enable students undertake modules across the university.

Further Information

It is important that you study the course syllabus before making your final choice; copies can be found on our website or requested from the UCD Agricultural Science and Veterinary Medicine Programme Office.



Notes

Disclaimer

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



www.ucd.ie/agandvet

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