



BSc (Hons) Agriculture with Animal Science

UCAS code D4D3

Institution code H12

Duration 4 years (full-time) including a one-year work placement. A three year programme is available for applicants with at least two years, full-time relevant work experience, or all who have completed a 12 month placement as part of another approved course

Start date September 2022

Location [Harper Adams University campus](#) (and location of work placement)*

The course

With a long history in applied livestock research, close links with industry, and highly qualified and experienced staff, Harper Adams is well placed to develop your understanding of sustainable livestock production.

The temperate climate of the UK is ideally suited to pastoral farming and livestock production is essential to the rural economy, with around 54 per cent of UK agricultural output derived from the livestock sector (DEFRA 2020).

In addition to the science and technology associated with modern livestock production, livestock specialists need to understand the animal welfare, food quality and environmental issues facing the industry. They must also be able to evaluate and apply advances in biotechnology to ensure a sustainable future for livestock farmers and a competitive market for animal products.

After a common first year, in your second year you will start to specialise in the area of animal science, studying areas such as farm animal production science, farm animal nutrition, farm animal health and welfare and biotechnology, whilst continuing to study more general aspects of agriculture, such as grass and forage production, waste management and farm business management and economics.

In the final part of the course, your specialisation becomes complete and the focus is on animal science, studying areas such as sustainable animal production systems, advances in animal production science, animal breeding and bioethics, animal product processing and a research project focused on animal science tailored to your interests and ambitions.

The Harper Advantage

- In choosing Harper Adams, you are choosing a trusted name with an outstanding reputation in the agricultural sector, a large agricultural student cohort that allows you to build your network from day one, plus extensive industry connections to support your career development.
- A full placement year in industry as part of your degree, enabling you to put knowledge into practice, develop your network and discover your future ambitions.
- More than 20 placement-scholarships open to students on Agriculture routes – offering guaranteed placement year job and additional financial support, plus a range of non-placement scholarships.
- Our far-reaching academic and industry experience and active involvement in applied livestock research and delivery of professional training to industry, ensures the course is vocationally relevant and up to date.

- 627-hectare farm on the campus – so you will have direct access to a commercial farm.
- Access to subsidised practical skills training and industry recognised certification through the Land Based Skills Programme.
- Study at the forefront of agri-tech, where industry and practitioners are working together on the latest precision livestock systems. Scope for student projects related to agri-tech grows every year.
- Common first year means you can change direction in year 1 if you wish.
- Access to Agriculture Programme to enable new entrants to the agricultural sector to qualify alongside those from more rural/agricultural backgrounds without disadvantage.
- Harper Adams students have been named RABDF Dairy Student of the Year five times in the last seven years.

Work experience

Agriculture applicants are required to have a minimum of 10 weeks practical experience on a commercial farm by 1st August in the year in which they enter the course. This can be part-time work, accumulated over weekends and vacations, and does not have to be completed as a 10 week block. Despite the COVID situation, opportunities for work experience in agriculture continue to be available and where possible applicants are strongly encouraged to gain the required practical experience as this will be of benefit to them in the longer term in understanding the industry, setting studies in context and placement applications.

However, the University recognises the challenges that the COVID situation may present in relation to gaining work experience and applicants can be reassured that if they are not able to meet the work experience requirement for 2021 entry, that this will not prevent them from gaining their place, provided that they meet any academic offer.

Access to Agriculture Programme

Applicants to Agriculture courses who are likely to meet the academic entry requirements, but who are identified as having minimal/no practical experience, and/or who are unlikely to meet the minimum practical experience requirements due to non-farm/non-rural background, and/or lack of appropriate contacts, can benefit from the [Access to Agriculture Programme](#) to gain the necessary practical experience in their first year of study.

Duration

4 years (full-time) including a one-year work placement. A three year programme is available for applicants with at least two years, full-time relevant work experience. Please contact [Admissions](#) for further information on this option.

A-level entry requirements

- Offers tend to be in the region of **96 - 112** UCAS points from a minimum of 3 A levels (the lower offer will be limited to those taking Science A Levels)
- General Studies and Critical Thinking are encouraged but **not** included in grades required
- Students should typically be studying **3 subjects at A2 level** to be considered
- There is a requirement for all applicants to have completed a minimum of 10 weeks work experience on a commercial farm by the 1st August. This can be part-time work, accumulated over weekends and vacations, and does not have to be completed as a 10 week block. Gaining the relevant practical experience in advance of the start of the course is preferable. However, for applicants applying for our BSc (Hons) Agriculture programmes, who do not come from a farm background and who do not have the relevant contacts necessary to complete the work experience, we recognise that this may be difficult to achieve. Applicants who are assessed to be in this position, following interview, will be offered the opportunity to enter the course via the [Access to Agriculture](#) programme, where help to gain the relevant practical experience is provided during the first year of study.
- **4 GCSEs at grade C/4 or above**, including English Language, Maths and a Science
- Where an applicant was not given access to GCSE Science, a BTEC level 2 in Science will be accepted as an alternative at a grade M. Confirmation will be required from the school/college that GCSE Science was not an option.

- Applicants can expect to receive offers including specific grades in specific subjects (for example, a B or C at A level, or an M or D for BTEC modules)
- **Biology A Level** (or equivalent) preferred (but not mandatory)
- When combining qualifications no more than one Subsidiary Diploma or Diploma (or comparable qualification such as an Extended Certificate) will be considered alongside A levels (two A levels for BSc)
- Overseas applicants please check our [English Language Requirements](#)
- Interviews will take place on an ad-hoc basis should the Course Manager wish to discuss any aspect of your application and for all potentially suitable applicants who require visa sponsorship.
- More information about the work experience required for this course can be found by clicking the link below
[Find out more about work experience](#)
- We have developed a range of measures and initiatives to give everyone the best chance to access our undergraduate degree programmes. The main feature of **Access to Harper** is our contextualised offer scheme. A contextualised offer is an offer which is reduced, by one grade or more from the standard entry requirement and is made to those applicants who may have experienced personal circumstances which put them at a disadvantage during their education, such as attending a low achieving school, living in an area of low participation in Higher Education or being a Care Leaver. The aim of this is to make the University more accessible for those applicants who may not have previously thought that they were eligible to apply. We have also introduced reduced entry requirements for those applicants who are over 21 years of age and further initiatives to make the application process easier for those applicants who need it.

To check if you qualify please visit the [Access to Harper](#) page.

Note: Entry Requirements are for guidance only, please check the UCAS website or contact Admissions for further information.

Work placement

The year-long placement period, in your third year, may be undertaken on either a progressive livestock farm in the UK or abroad or within the animal health and welfare, breeding, nutrition or farm assurance industries in the UK. Examples of employers include BQP, Premier Nutrition, For Farmers, Cogent and Daylesford Organics. Agriculture students from a family farm wishing to undertake a farm placement are required to work at least 50 miles from their home farm and are not usually normally permitted to return to previous employers.

Several commercial scholarship opportunities linked to placement are available to apply for with sponsoring companies paying a significant amount towards the course fees of successful applicants.

Teaching and learning

What you study

All agriculture students share a common first year, studying the same modules, before focusing on their specialism; this allows students to change course during the first year.

The first year of the course provides a general introduction to agriculture in terms of animal and crop production, underpinning biological and environmental science, an introduction to farm business management and marketing, and agricultural mechanisation. In the second year of the course you start to specialise in the area of animal science, studying areas such as animal production science, farm animal nutrition, farm animal health and welfare, and biotechnology, whilst continuing to study more general aspects of agriculture such as grass and forage production, waste management and farm business management and economics. In the final part of the course your specialisation becomes complete and the focus is on animal science, studying areas such as sustainable animal production systems, advances in animal science, animal breeding and bioethics, animal product processing and a research project focused on animal science.

Teaching and learning

The Agriculture courses at Harper Adams involve a combination of lectures, tutorials and laboratory sessions, together with practical classes on the [University farm](#) designed to demonstrate principles in practice and the application of scientific, technological and business principles to commercial agricultural and food production. In addition, the University has extensive links with other agricultural and food related businesses, and external visits and outside speakers are integrated into the programme where appropriate. Throughout the course students are expected to apply the skills acquired to solve real-life problems, such that on completion they are able to demonstrate both academic ability and commercial application, which is a combination highly valued by employers. The proportion of independent study increases as the course progresses, particularly in the final year where students have the opportunity to undertake a dissertation in a subject area of their choice.

* During the Covid-19 Pandemic the University is delivering blended learning. Government guidance is being constantly reviewed to establish the learning events which can be delivered face to face. Please refer to our [frequently asked questions](#) for further details.

Assessment methods

Assessment is via a balance of course work and examination. Weighting varies depending on course and year of study, but weighting is typically around 65 per cent on course work and 35 per cent on examination; this allows individuals to play to their strengths if they are better at course work than examinations or vice versa. Types of assignment include appraising production systems on the [University farm](#), whole farm case studies, laboratory based analyses and literature based reviews. Format of assignments varies and includes written reports, essays, technical notes, presentations and oral examinations. Students receive written feedback on all course work to help them improve. In addition, first year students undertake examinations in two subjects at the end of the first term to enable them to gauge how they are progressing and feedback is provided on these exams. Staff are able to provide advice and guidance on revision, and many modules include revision sessions.

Careers

The applied nature of this course helps you to develop skills that are in demand within the livestock sector and ancillary industries. Career opportunities are excellent, with students finding employment both on farms as livestock enterprise and farm managers and in the ancillary sector in commercial and technical positions, or you could go on to postgraduate study.

What will I study?

Year	Study time (The percentage of time spent in different learning activities)			Assessment methods (This is the breakdown of assessment methods)		
	% time in lectures, seminars and similar	% time in independent study	% time on placement	Written exams	Practical exams	Coursework
1	33%	67%	0%	41%	0%	59%
2	27%	73%	0%	37%	0%	63%
3	0%	0%	100%	0%	0%	100%
4	17%	83%	0%	37%	0%	63%

Year 1	Year 2	Year 3	Year 4
Skills for the Agricultural Professional (C4001C17) 15	Grass and Forage Production and Utilisation (C5004C17) 15	Placement year	Honours Research Project (HRPROJC17) 30
Animal Production Systems (A4005C17) 15	Wastes, Manures and Renewables (C5007C17) 15		People Management Skills (R6018C17) 15
Crop Production Systems (C4013C17) 15	Farm Business Management and Economics (R5003C17) 15		Sustainable Animal Production Systems (A6022C17) 30
Bioscience for Agriculture (C4011C17) 15	Research Methods (C5005C17) 15		Advances in Animal Production Science (A6001C17) 15
Environmental Science for Agriculture (C4014C17) 15	Farm Animal Nutrition (A5002C17) 15		Animal Improvement and Bioethics (A6005C17) 15
Assessment of the Farm Business (R4010C17) 15	Farm Animal Health (A5005C17) 15		Food Animal Processing and Manufacture (F6008C17) 15
Agri-food Marketing (F4005C17) 15	Farm Animal Production Science (A5001C17) 15		
Agricultural Mechanisation and Buildings (E4001C17) 15	Animal Biotechnology and Genetics (A5004C17) 15		

Skills for the Agricultural Professional

Year of study 1

Code C4001C17

Credits 15

Core/option Core

Module contact [Terry Pickthall](#)

This module helps develop students' confidence and competence in the academic skills and professional practices that will enable success within their Agriculture course. The module has four main strands or themes:

1. **Academic skills** including exploring Reading for Success, writing in different ways and information searching.
2. **Professional futures** preparing for placement and employment.
3. **Learning well** which promotes students' self-monitoring and planned improvements in individual approaches to learning.
4. **Digital citizenship** where students review the online and information technology skills that they need to succeed in study and in their professional practice.

Agriculture students will follow a common study programme, but they will be encouraged to spend more time on areas of development that they recognise as challenging. The module is designed to equip students

with skills but also with personal resilience, the ability to take control of their own learning, the ability to study independently and to introduce them to the concept of continuing professional development.

Animal Production Systems

Year of study 1
Code A4005C17
Credits 15
Core/option Core
Module contact [Dr John Donaldson](#)

An understanding of livestock production underpins many careers within the land based sector and forms a significant part of the global food industry. As such, an understanding of livestock systems is required across a range of courses.

The module will provide learners with a knowledge of the main livestock systems and how these systems inter-relate with other sustainable land based activities. The various systems will be considered in terms of input requirements, production and husbandry and analysis and interpretation of physical and financial performance data. The module will also consider aspects of sustainable production both in terms of changes to EU support and in light of global population changes.

You will:

- Develop an understanding of the systems of management for the various meat, milk and egg producing systems in the UK and EU and how these are impacted upon by changing legislation and consumer requirements.
- Identify the factors which influence the quality and safety of produce derived from farm animal production systems.
- Relate the requirements of farm animals to land type, building design, equipment and housing systems employed.

Crop Production Systems

Year of study 1
Code C4013C17
Credits 15
Core/option Core
Module contact [Mr Matthew Rodenhurst](#)

The module will cover the crop production processes characteristic of NW Europe, including wheat, barley, oilseeds, potatoes, sugar beet, grassland and forage. You will focus on 'best practice' crop production methods for a range of food and non-food crops and will be related to the need for resource efficient, economic and environmentally acceptable production linked, where necessary, to the current EU and UK Single Payment Schemes.

The module will provide the necessary basic understanding of crop production practices and the related regulatory framework appropriate for higher level study. The module will provide underpinning crop production knowledge for a range of crop science and agronomy modules.

You will:

- Identify the essential requirements for the establishment, growth, development and market requirements of a range of crops.
- Explain and interpret the underlying concepts and principles of crop production associated with current best practice.
- Relate the short and long term factors influencing crop management to appropriate farm practice.
- Interpret qualitative and quantitative data relevant to crop production practices.
- Assess the wider consequences of crop production activities in the context of sustainable production systems.

Bioscience for Agriculture

Year of study 1
Code C4011C17
Credits 15
Core/option Core
Module contact [Dr Laura Vickers](#)

This module will develop an understanding of the basic physiological processes that occur in both plants and animals. By the end of this module students should have an understanding of co-ordination and digestion in farm animals, the importance of morphology, photosynthesis, translocation and water relations in plants, and the diverse roles that micro-organisms play in plant and animal production systems. In addition, this module provides an introduction to basic laboratory skills.

The information gained in this module forms a foundation for later Animal Science and Crop Science modules.

You will:

- Describe underpinning biological and chemical processes in agricultural and applied sciences, and apply basic laboratory techniques in the study of animals, plants and micro-organisms.
- Identify the similarities and differences in the key biological processes taking place in microbes, plants and animals and relate how these processes contribute to growth and replication.
- Explain the necessity for co-ordination in animals and plants and describe how this is achieved via chemical and nervous control mechanisms.
- Identify and explain the functions of major anatomical structures and their roles in plants and animals.

Environmental Science for Agriculture

Year of study 1
Code C4014C17
Credits 15
Core/option Core
Module contact [Dr William Hartley](#)

The aim of the module is to provide students with an understanding of how agriculture interacts with the surrounding environment. There will be an emphasis on sustainability and the ecological consequences of unsound management decisions on conservation. The nature of soil and water systems will be investigated, and the factors which influence natural soil systems identified, soil formation, soil properties and hydrological relationships will be studied whilst the effect of climate change on soils and water will also be investigated.

You will:

- Define the effects of natural and human-induced processes upon soil formation.
- Explain the effects of climatic change on soils.
- Classify different soil types and recognise simple soil profiles.
- Identify the distribution of valuable habitats in lowland and upland environments.
- Describe the hydrological cycle in detail and its importance to agricultural sustainability.

Assessment of the Farm Business

Year of study 1
Code R4010C17
Credits 15
Core/option Core

This module is designed to introduce students to the basic knowledge needed to determine areas of strength and weakness within a farming business. Students will be introduced to basic business concepts associated with the recording and reporting of business and enterprise performance. They will then be introduced to techniques for analysis and evaluation of the data, to include different types and sources of external comparative data.

You will:

- Determine the role and scope of management in the farm business.
- Prepare and interpret a set of farm management accounts.
- Assess the physical and financial performance of individual enterprises against published data.
- Identify the role and function of administrative methods and systems that are used to produce management data.

Agri-food Marketing

Year of study 1
Code F4005C17
Credits 15
Core/option Core

This module will provide students with knowledge of the marketing systems and market opportunities of major agricultural commodities open to primary producers. It will consider and evaluate the global and dynamic market forces affecting the interdependent players of the agri-food supply chain from primary producer to the end consumer and the extent to which this influences the primary producer's approach to agri-food production and marketing. It will cover the concept of 'farm to fork' and where alternative opportunities exist for primary producers and agricultural businesses. The role of market planning and management of risk along with methods by which this may be achieved will be reviewed in order to result in higher levels of efficiency, effectiveness and market returns.

You will:

- Identify and explain the factors influencing changes in production, channels of distribution and consumption within the UK for major farm commodities.
- Appraise the global business and market environmental factors that influence the UK agri-food supply chain.
- Identify the role of market planning in UK farm businesses and methods to maximise producer returns and manage risk.
- Discuss the alternative marketing systems and options open to primary producers for best use of resources and sustainability.

Agricultural Mechanisation and Buildings

Year of study 1
Code E4001C17
Credits 15
Core/option Core
Module contact [Dr Simon Woods](#)

Modern farming systems rely heavily on mechanisation and farm infrastructure. Those involved in the farming industry need to be familiar with the basic operating principles and management of these assets and require an understanding of how machinery is combined to perform different tasks. This module is designed to enable the student to understand the operating principles of the more common agricultural machines and equipment and to comprehend the management of mechanisation systems in to which they are integrated.

To successfully complete this module, students will have to demonstrate understanding of a broad range of scientific, economic and business concepts and principles relevant to farm mechanisation.

Grass and Forage Production and Utilisation

Year of study 2
Code C5004C17
Credits 15
Core/option Core
Module contact [Louisa Dines](#)

Feed and forage costs are one of the largest drivers of cost of production on livestock units. Improving the quantity and quality of forage a business can produce and utilising it efficiently, is a crucial element to maintaining competitiveness in the current economic climate. Small improvements in the productivity and utilisation of these crops can have a major impact on the economic performance and therefore viability of livestock production systems. These improvements can include better variety and site selection, better establishment and agronomic management, more accurate assessment of appropriate harvesting/grazing time and method, appropriate storage conditions and more accurate assessment of nutritional quality.

This purpose of this module is to introduce the key features of grassland and the main alternative forage crops and describe their suitability for different sites and production systems. It covers the principles and practices of production, harvesting, storage and effective utilisation of a range of grass and forage crops whilst considering the impact of forage production and utilisation on the environment and how any potential negative effects can be mitigated.

Wastes, Manures and Renewables

Year of study 2
Code C5007C17
Credits 15
Core/option Core
Module contact [Paul Lewis](#)

Population growth and human lifestyle are increasingly putting pressure on the earth's natural resources, with many activities being far from sustainable. Waste production and waste/energy management are key issues for policy makers and advisors. A major influence on future planning is climate change, which may impact on many of our natural resources and agricultural systems. Careful, appropriate and innovative approaches to managing resources are therefore necessary.

This module focuses on three key areas, waste production and management, organic manures, both farm and off-farm, and renewable energy. In detail it investigates how waste can be minimised and utilised for secondary value, particularly within agriculture. It includes study of the waste hierarchy and its implementation, manure management, energy conservation and renewable energy. The approach will be wide-ranging but there will be an overarching emphasis on agricultural and rural examples with environmental implications.

Farm Business Management and Economics

Year of study 2
Code R5003C17
Credits 15
Core/option Core
Module contact [Tony Asson](#)

This module builds on knowledge from the first year module Assessment of the Farm Business by introducing students to whole farm business planning techniques in the context of the assessment of the external business environment.

The module incorporates applied agricultural economics (differentiated from neo-classical economics and economic theory and formulation expected on an Ag Econ programme) to develop an understanding of the wider issues and drivers affecting prospects in the main commodity sectors. Incorporating further assessment of the productivity factors of the business (Land; labour; capital etc.) and building on identified strengths and weaknesses within the business identified through the application of assessment techniques, students will be introduced to forward budgeting and planning techniques at enterprise and whole business levels.

Research Methods

Year of study 2
Code C5005C17
Credits 15
Core/option Core
Module contact [Dr Edward Dickin](#)

This module is the fourth in the Professional Scholarship Programme (PSP). The module particularly develops the skills and knowledge necessary to successfully complete the Honours Research Project, which will also enhance employability skill for the Placement Period and careers on graduation.

The module will cover the key elements of the research process, set in the context of the student's own course discipline. Students will examine the academic and industrial role of research and how it informs professional and managerial practice. They will enhance their ability to locate, select and critically evaluate information associated with a particular problem, using a range of sources and particularly peer reviewed empirical studies. In addition the students will plan, and justify the need, and investment for research in an effort to develop their insight into the management of practical research. By carrying out statistical analysis using appropriately accessible software, the students will develop their ICT skills and further their understanding of the role of statistics in the research process.

While the intended learning outcomes are common to all students across the University, this module provides discipline specific focus with content, learning and assessments that are tailored for subject/course needs, which will then lead to value interpretation and communication of research outcomes.

Farm Animal Nutrition

Year of study 2
Code A5002C17
Credits 15
Core/option Core
Module contact [Dr Robert Wilkinson](#)

An understanding of factors affecting dietary nutrient supply and animal nutrient requirements is essential for ration formulation and the design of feeding strategies to optimise the efficiency of feed utilisation, product quality and animal welfare, whilst mitigating any detrimental effects on the environment. This module will examine the chemical components of animal feeds and develop an understanding of how the chemical composition of feeds contributes to nutrient supply in farm animals. It will also cover the main techniques associated with feed evaluation and develop the ability to calculate animal requirements and utilise quantitative data in the formulation of rations and feeding strategies for different classes of farm animals. It will also cover mineral/vitamin nutrition and the metabolic consequences of nutrient deficiency or excess.

- Analyse animal feeds to determine their chemical composition and nutritional value.
- Explain factors affecting nutrient supply from feeds and the nutrient requirements of farm animals.
- Evaluate diets to assess the adequacy of nutrient supply, predict performance.
- Formulate diets and feeding strategies to satisfy the nutrient requirements of different classes of farm animals.
- Relate the metabolic function of essential minerals/vitamins to symptoms of deficiency or toxicity.

Farm Animal Health

Year of study 2
Code A5005C17
Credits 15
Core/option Core

The public are now more aware of farming practices and animal welfare issues and with growing concerns about antimicrobial resistance it is paramount that those involved with farmed livestock have a very good knowledge of both the maintenance of good health, through disease management, and of high standards of welfare which are fundamental to the success of efficient and acceptable animal production practices. This

module will aim to provide students with an understanding of the importance of disease prevention, rather than treatment, and the ability to develop integrated disease control programmes to maximise livestock health and welfare.

Farm Animal Production Science

Year of study 2
Code A5001C17
Credits 15
Core/option Core
Module contact [Dr Emma Bleach](#)

Knowledge of the scientific principles underlying the processes of reproduction, lactation and growth in farm animals is vital for successful commercial production and for further manipulation of the processes to enhance efficiency. This module extends knowledge gained in *Bioscience for Agriculture and Animal Production Systems* and underpins the application in the Honours level module *Sustainable Animal Production Systems and Advances in Animal Science*.

Animal Biotechnology and Genetics

Year of study 2
Code A5004C17
Credits 15
Core/option Core
Module contact [Dr Sandy Mackenzie](#)

This module develops the principles of animal breeding, genetics and biotechnology. It will cover the application of current biotechnology technologies used to enhance animal production, health and breeding. The knowledge gained from this module leads on from *Bioscience for Agriculture and Animal Production Systems* and complements other modules in which the key features of biotechnology and genetics are discussed.

Placement year

Year of study 3
Core/option Core

Read our dedicated [Placement Learning](#) pages for information on the many benefits of the placement year.

Honours Research Project

Year of study 4
Code HRPROJC17
Credits 30
Core/option Core

The Honours Research Project is designed to allow students to develop the skills and personal resilience needed to undertake a sustained, significant and high quality project. In conjunction with his or her supervisor, and in light of detailed course specific advice, each student will select a topic for investigation. They will then plan, execute and report their project. The module will draw upon learning from other taught modules, but it also requires a high degree of independent learning.

Students will need to apply their learning about the research methods associated with their discipline as they locate data to support their project; they may need to apply methods creatively according to the nature of their research topic. Throughout the module, students will be expected to make choices about the scale and manageability of their work; they will also need to apply good time management skills to ensure success. The project will require all students to search for literature related to their topic and to read independently. Students must make decisions about the direction of their research, and they will be

expected to work pro-actively to benefit from supervision opportunities.

Students will be expected to ensure that each part of their project is ethically sound; this means following protocols but also by developing an ethical mind-set which is sensitive to stakeholders and issues arising in the research process. Students must ensure that they attend to issues of health and safety throughout their research.

People Management Skills

Year of study 4
Code R6018C17
Credits 15
Core/option Core
Module contact [Nigel Hill](#)

The structure of UK agriculture over recent years has resulted in an increase in size of farms and a reduction in the number of employed staff. However, the cost to farm businesses of poor people management skills is substantial, so it is essential that students have an understanding of the effective management of people.

This module is designed to develop an understanding of human motivation and management style, the responsibilities of employer and employee and an appreciation of how to manage effective interpersonal relationships at work, particularly drawing on experiences from placement. Group work and digital activities particularly will develop the graduate skills required for the rapidly changing workplace environment.

Sustainable Animal Production Systems

Year of study 4
Code A6022C17
Credits 30
Core/option Core
Module contact [Professor Liam Sinclair](#)

This module is designed to develop the ability of students to analyse UK and world animal systems, resolve associated problems and to ensure a sustainable, environmentally and animal welfare conscious production system that is profitable. This will require the application of knowledge and intellectual skills gained throughout the course, and from experience gained within the animal industry.

Each student will study 4 distinct production system themes: Sustainable Dairy Systems, Upland Systems, Lowland Systems or Pig and Poultry Systems. The learning associated with the module will be achieved through keynote lectures, visits, farm classes, outside speakers, tutorials and laboratory analyses and the independent learning associated with the assignment. Additionally there will be an examination paper.

Advances in Animal Production Science

Year of study 4
Code A6001C17
Credits 15
Core/option Core
Module contact [Dr Claire Kershaw](#)

This module is designed to develop the ability of students to analyse animal systems and developments in technology, including the application of precision techniques. The application of these technologies to sustainable, environmentally and animal welfare conscious production systems will be evaluated.

This module will build on knowledge gained in previous farm animal modules including Farm Animal Production Science, Farm Animal Science and Sustainable Livestock Production Systems.

The learning associated with the module will be achieved primarily through keynote lectures both from university staff and visiting speakers.

Animal Improvement and Bioethics

Year of study 4
Code A6005C17
Credits 15
Core/option Core

With the rapid developments in animal breeding technologies an understanding of the processes involved and their application to modern livestock production is required. This module will provide the student with the opportunity to apply the genetic principles underlying animal breeding to a number of species of animals and systems of livestock production. To undertake this, students will require an understanding of the systems used in livestock production and other roles to which animals are currently put and may be used for in the future in the context of the socio-economic environment in which they operate. In addition, the relationship between animals and humans is explored and consideration is given to the ethical implications of the various roles of animals in society and the manipulation of animals by biotechnology.

Food Animal Processing and Manufacture

Year of study 4
Code F6008C17
Credits 15
Core/option Core

Animal production forms a key part of the global food system upon which human beings rely. The products of animal production systems – simplistically meat, milk, eggs – are foods in their own right and the essential raw materials used to make numerous manufactured food products. Students undertaking animal science courses need to have a competent grasp of the relationship between animal production and the food industries that utilise animal products. Such understanding should encompass factors affecting the quality and food safety of animal products used by the food industry, the characteristics of the animal products that make them of interest to food manufacturers and consumers, as well as the principal processing and preservation technologies used by the food industry in preparing animal products for consumption as food products.

This module considers the characteristics and use of muscle food derived from terrestrial meat animals – principally beef, pigs, sheep and chicken – as well as fish and other animal products such as milk and eggs. Fundamental to the consideration of animal products will be the science relating to an understanding of the products as food materials, affecting issues such as quality, food safety, functionality and human nutrition, as well as the technologies involved in harvesting, processing and preserving the materials into food products. Consideration is also given to the structure and financial value of the global animal products industries, as well as to legal regulation affecting the harvesting and use of animal products for human food.