



BSc (Hons) Agriculture with Livestock Production Science (with placement)

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 2027

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

Agriculture has a vital role to play in global food production and security, climate change mitigation, environmental protection, water management and renewable energy creation.

Our Agriculture with Livestock Production Science students are taught by lecturers with extensive industry and research experience to develop sustainable animal production systems, integrating appropriate technologies to maximise economic, social and environmental security. You will be studying in a diverse range of learning spaces located at the heart of our University Farm alongside students from a wide range of rural and urban backgrounds, whilst establishing a life-long network of friends and professional contacts.

From the outset you will be putting your learning into practice, engaging with real-world scenarios and projects from day one. Supported by an integrated placement year in industry, you will be ready for your future career, having developed a range of personal, technical and professional skills that today's employers value. You will be well prepared for farm-based employment as livestock enterprise and farm managers, and commercial and technical positions in the animal nutrition, breeding and health sectors. Additionally, your degree will equip you with the skills to continue in research or education.

A-level entry requirements

- **Entry requirements for 2027 entry are not currently available. Please contact Admissions for advice**

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.

You will have a dedicated Placement Manager, support officer, and tutor to visit you whilst on placement. You will usually undertake paid employment for at least 12 months on modern progressive farms or in the agricultural support industries. Agriculture students wishing to undertake a farm placement are required to work at least 50 miles away from home and are not 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 tuition fees of successful applicants.

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 1	Year 2	Year 3	Year 4
Introduction to Farm Business Management (C4001HF)10	Preparation for Placement and Research (C5035HF)10	Placement year	Professional Team Project (HF)10
Introduction to Farming Systems (C4002HF)20	Farm Business Management with Marketing (C5005HF)20		Global Perspectives in Agriculture (HF)10
Agri-Food Supply Chains (C4003HF)10	Natural Resources and Farming Systems (C5034HF)20		Livestock Production Systems and the Natural Environment (HF)20
Assessing the Efficiency of Farming Systems (C4004HF)20	Livestock Production Systems (C5012HF)20		Advances in Livestock Production Science (HF)20
Agricultural Technology and Digital Farming (C4005HF)20	Farm Animal Biochemistry, Nutrition and Health (C5033HF)20		Agricultural Business Development and People Management (HF)20
Agricultural and Environmental Science (C4006HF)20	Farm Animal Science and Improvement (C5063HF)20		Honours Research Project - Agriculture (HF)40
Skills for Agriculture (C4007HF)20	Elective module UG		
Electives			
World Cropping Systems (C5016HF)10			
Global Animal Production (C5009HF)10			
Managing Change in Agriculture (C5013HF)10			
Autonomous Systems (E5004HF)10			

Introduction to Farm Business Management

Year of study 1

Code C4001HF

Credits 10

Core/option Core

Module contact [Professor Andy Wilcox](#)

The requirement to produce more food for a global growing population whilst using less resources has never been more important. To be able to manage an efficient business there is a need to identify the current business performance and analyse areas of performance which can be improved. This module is designed to introduce you to the basic knowledge needed to determine areas of strength and weakness within a farming business. You will be introduced to basic business concepts associated with the recording and reporting of business performance. You will then be introduced to techniques for analysis and evaluation of the data, to include different types and sources of external comparative data.

Introduction to Farming Systems

Year of study 1
Code C4002HF
Credits 20
Core/option Core
Module contact [Dr John Donaldson](#)

As the global population continues to grow, increasingly in modern agriculture, there is an appreciation of the importance of adopting a systems approach to food production. Farming enterprises seldom operate in isolation and sustainable solutions are often identified where a synergy exists between different production elements. This module will provide the fundamentals of crop and animal production systems, including basic husbandry and farming practices intended to optimise outputs in a sustainable way. In doing so it will demonstrate the benefits to be gained operating within a particular system and will introduce the concept of integrated systems. The relationship between input costs, production outputs and their implication on farm profitability will be introduced here, in preparation for the subsequent Assessing the Efficiency of Farming Systems module.

Agri-Food Supply Chains

Year of study 1
Code C4003HF
Credits 10
Core/option Core
Module contact [Mr Luís de Aguiar](#)

This module aims to enhance your knowledge and understanding from an agri-food marketing perspective of a range of key commodity sectors in the UK. The module also aims to instil the notion of a dynamic agri-food sector so that you will be able to address challenges and identify opportunities for primary producers and organisations. The module will equip you with practical tools to better understand internal and external market forces affecting those within the agri-food sector. In addition, you will become familiar with market and consumer trends and opportunities. Fundamentally, the module will provide a field to fork integrated overview of the sustainable agri-food supply chain i.e., farmers, processors, retailers and consumers and their interactions.

Assessing the Efficiency of Farming Systems

Year of study 1
Code C4004HF
Credits 20
Core/option Core
Module contact [Dr John Donaldson](#)

In this module, you will further develop your knowledge of both crop and animal production systems, gained from the Introduction to Farming Systems module, and begin to consider the impact of policy and legislation on profitable farming systems. Using the concepts gained from the Introduction to Farm Business Management module, in the first part of the year, you will apply techniques for analysis and evaluation of the economic and environmental sustainability of farming systems. Using published data from a range of sources, including AHDB and Farm Business Survey, you will assess the physical and financial performance of individual enterprises and farming systems, to better understand the importance of benchmarking.

Agricultural Technology and Digital Farming

Year of study 1
Code C4005HF
Credits 20
Core/option Core
Module contact [Dr Simon Woods](#)

Modern farming systems rely heavily on technology and farm data. 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 technology is combined to perform different tasks. This module is designed to enable you to understand the operating principles of the more common agricultural machines and equipment and to comprehend the management of mechanisation systems into which they are integrated. Farm data and other digital assets are increasingly important for the efficient use of resources and this module will facilitate access, analysis and interpretation of data from a range of farm sources. To successfully complete this module, you will have to demonstrate an understanding of a broad range of scientific, economic and business concepts relevant to farm technology and data.

Agricultural and Environmental Science

Year of study 1
Code C4006HF
Credits 20
Core/option Core
Module contact [Dr Laura Vickers](#)

This module intends to provide you with the foundation knowledge within the fields of Biology and Environmental Science that underpin Agricultural Science. It provides the framework of knowledge and understanding to allow you to progress on your chosen Agriculture specialism by providing you with an understanding of the ubiquitous and universal processes that occur in plants, animals and microbes, and the fundamental components of physiology and anatomy. This module will also bring you to a level of understanding to competently undertake your second-year natural resource management module by covering the hydrological cycle and soil properties, linking their importance to agriculture, and touching on how human activities can impact their quality.

Skills for Agriculture

Year of study 1
Code C4007HF
Credits 20
Core/option Core
Module contact [Terry Pickthall](#)

You will develop the skills and attributes required for your success in the Agriculture course, focusing on Academic (including research), Professional (including securing a placement or other employment), Digital and Learning skills. The course will be delivered with the aim of developing you to become an independent and resilient learner and introduce the importance of being able to reflect on personal development achieved and required across all 4 areas of skills focus.

Preparation for Placement and Research

Year of study 2
Code C5035HF
Credits 10
Core/option Core
Module contact [Terry Pickthall](#)

The purpose of this module is to refresh and build on the skills developed during the first year Skills for Agriculture Module, with a clear focus on the professional and research skills that you will require for both placement and the Honours Research Project.

Students who successfully complete this module will be able to:

- Demonstrate core research skills for success during placement, and their Honours Research Project.
- Develop and reflect upon the professional skills required to secure a placement.
- Improve and continue to develop a SMART Personal Development Plan (PDP).

World Cropping Systems

Year of study 2
Code C5016HF
Credits 10
Core/option Core
Module contact [Dr Mitch Crook](#)

Food crops are grown all around the world in different climates, at different scales, for home consumption or export using intensive or extensive production systems. Crop production is a fundamental component of global food security with a critical role in feeding communities and responding to climate change.

In this module, you will learn about the challenges and potential for global cropping systems including an understanding of the factors that influence food security around the world - through a study of representative crop case studies. This will include information about how climate, people and markets affect where crops are produced, processed and transported around the world; and how government policies are used to support the cropping systems. You will also learn about the environmental impacts of crop production and the likely impacts of future climate change. This will help you to develop a better understanding of how crop production and food systems may change in the future.

Farm Business Management with Marketing

Year of study 2
Code C5005HF
Credits 20
Core/option Core
Module contact [Professor Andy Wilcox](#)

This module will build on knowledge from the first-year modules Introduction to Farm Business Management and Assessing the Efficiency of Farming Systems by introducing you to whole farm business planning techniques in the context of the assessment of the external business environment.

The module incorporates applied agricultural economics to develop an understanding of the wider issues and drivers affecting prospects in the main commodity sectors encountered in the UK market. It focuses on the assessment of productivity factors integral to the business (land; labour; capital) and building on strengths and weaknesses within the business identified through the application of appropriate assessment techniques. The module introduces you to the fundamentals of marketing and the sourcing of market data and research to help formulate credible forward budgets.

You will be introduced to forward budgeting and planning techniques from enterprise to the whole business level.

Global Animal Production

Year of study 2
Code C5009HF
Credits 10
Core/option Core
Module contact [Edmore Mashatise](#)

As the global population continues to rise, so will the demand for animal protein to ensure food security. In some countries across the world, millions of small-scale farmers and pastoralists depend on livestock production for their livelihoods and survival. However, in other countries, large-scale livestock production meets the demand for animal products and meat. This module will provide an overview of global animal production for both aquatic and terrestrial livestock in intensive and extensive systems across the world. The module will compare aquatic animals, ruminant and non-ruminant production systems in different countries/areas, which may include Sub-Saharan Africa, Asia, North and South America and Europe. In addition, this module will explore some of the threats and sustainability issues the world faces for global animal production e.g. disease, climate change and land use change, using case studies.

Managing Change in Agriculture

Year of study 2
Code C5013HF
Credits 10
Core/option Core

Reorganising, restructuring and implementation of new systems, enterprises and working practices are essential elements of operating a business. Successful change can be achieved at individual, team and organisational levels using several practical tools and skills. Change is best achieved through the understanding and commitment of the people involved.

This module aims to help you understand the process of change and how best to evaluate and implement change in a business or organisation. The module encompasses recognised change management techniques to analyse the issues and plan the implementation of the proposed change. The planning process will include anticipating stakeholder reactions, how best to involve and influence stakeholders, estimating resource requirements and setting realistic milestones and objectives. Finally, you will learn how to monitor the implementation of change and evaluate its effectiveness.

Natural Resources and Farming Systems

Year of study 2
Code C5034HF
Credits 20
Core/option Core
Module contact [Paul Lewis](#)

Agricultural production and management are inherently linked to, and supported by, key natural resources such as soil, water, air, energy and biodiversity. Global population growth and human lifestyles, together with associated agricultural activities, are increasingly putting pressure on these resources, with many activities being far from sustainable. Increasingly climate change impacts on the planet are affecting natural resources and their connections to agriculture. Careful, appropriate and innovative approaches to conserving and protecting these resources are therefore necessary.

This module identifies the important natural resources necessary for a viable and sustainable agricultural industry and their direct and indirect connections. It will address both challenges and opportunities and will consider the importance of resource enhancement. The approach will be wide-ranging but there will be an overarching emphasis on the natural resources available for, and linked to, UK agriculture and food production. These will be related to typical agricultural sectors and their practical concerns but will be broadened to consider relevant policy, advice, legislation and farming support.

Autonomous Systems

Year of study 2
Code E5004HF
Credits 10
Core/option Core
Module contact [Dr Sven Peets](#)

An automated system is an integration of sensors, controls, actuators and programming designed to perform a function with minimal or no human intervention. You will learn how the integration of these is applied in the real world.

Using appropriate theory and practice, you will design an automated system, specify and select components and demonstrate its functionality.

You will apply the theory and develop practical skills through a mixture of lectures, tutorials, and practical laboratory work.

You will be assessed by a group presentation, where you will investigate a commercial system. You will

design, manufacture, and demonstrate a functioning automated system.

Students who successfully complete this module will be able to:

- Critically appraise commercial automated systems.
- Review the components and control of automated systems.
- Demonstrate the ability to implement an automated system.

Livestock Production Systems

Year of study 2
Code C5012HF
Credits 20
Core/option Core
Module contact [James McCaughern](#)

This module will build on the fundamental principles of livestock production established during the Introduction to Farming Systems module previously undertaken at level 4. Its overall aim is to further develop your understanding of the production processes for specific farm animal livestock species. The module will identify the markets and quality requirements for a range of livestock enterprises found in the United Kingdom and North Western Europe to include: pig, beef, sheep, poultry (broilers and layers), and dairy enterprises. Appropriate production techniques relating to the overall topics of nutrition, health, and infrastructure from breeding through to end market will be examined, with a focus on sustainable approaches to livestock production systems. The key interventions to optimise production and meet product quality requirements throughout the production cycles will be identified, and the impact of the wider socio-economic landscape on livestock production systems will also be considered.

Farm Animal Biochemistry, Nutrition and Health

Year of study 2
Code C5033HF
Credits 20
Core/option Core
Module contact [Dr Robert Wilkinson](#)

An understanding of factors affecting nutrient supply, animal nutrient requirements and the causes of disease are essential to optimise the efficiency of resource utilisation, product quality and health and welfare, whilst mitigating any detrimental effects on the environment. During this module, you will develop an understanding of the structure and function of the main macromolecules that contribute to nutrient supply and the biochemical processes by which they are incorporated into animal products. You will also learn how animal feeds are evaluated to predict nutrient supply and develop the ability to calculate animal nutrient requirements and use quantitative data to formulate rations and feeding strategies for different classes of farm animals. In addition, you will develop an understanding of the causes and prevention of disease and the ability to develop integrated disease control programmes to reduce mortality and optimise animal wellbeing.

Students who successfully complete this module will be able to:

- Relate the structure of biological macromolecules to their function in both plant and animal tissues.
- Describe the processes of digestion and metabolism associated with nutrient supply and the synthesis of animal products.
- Evaluate feeds to quantify nutrient supply and calculate animal nutrient requirements.
- Formulate diets and feeding strategies to meet nutrient requirements and predict performance.
- Assess the causes of disease and develop strategies to enhance animal health and welfare

Farm Animal Science and Improvement

Year of study 2
Code C5063HF
Credits 20
Core/option Core
Module contact [Dr Sandy Mackenzie](#)

Knowledge of the scientific principles underlying the processes of reproduction, lactation, growth and genetics in farm animals is vital for successful commercial production and for further manipulation of the processes to improve efficiency. This module addresses fundamental and applied sciences relevant to production animals. It will enhance your knowledge and understanding gained in Introduction to Farming Systems and Agriculture and Environmental Science at Level 4.

Students who successfully complete this module will be able to:

- Evaluate the function of the key elements of reproduction, lactation and growth in a range of farm animal species.
- Review the role of endocrine hormones in the regulation of reproduction, lactation and growth in a range of farm animal species.
- Analyse the function of different nucleic acids and evaluate their importance in animal selection. Apply Mendelian principles to the inheritance of qualitative and quantitative characters, and relate changes to gene frequency to changes in the population.
- Apply and evaluate recombinant DNA technology and its use in the animal and food industries and how they contribute to the debate on genetic modification of organisms.

Elective module UG

Year of study 2
Core/option Core

Choose one from the list of available electives

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.

Professional Team Project

Year of study 4
Code HF
Credits 10
Core/option Core
Module contact [Professor Andy Wilcox](#)

In the Agriculture sector you are expected to work both independently and as part of a wider team to provide solutions to industry problems.

In this module, you will build upon the teamwork and self-reflection skills developed during your Skills for Agriculture module at Level 4 as well as your Placement period. This module aims to provide you with an opportunity to work with students from across the Agriculture discipline, as part of a project team to deliver on a range of industry-related outcomes. During this project, you will be expected to demonstrate effective and professional behaviours and be able to reflect on your abilities and actions throughout the process. You will be supported by a mentor who will provide guidance around the agreed project title and outcomes which will address a practical problem in your field of study.

Global Perspectives in Agriculture

Year of study 4
Code HF
Credits 10
Core/option Core
Module contact [Louisa Dines](#)

Global agricultural systems are required to provide sufficient food and nutrition for a rapidly growing population whilst simultaneously being required to maintain, if not improve ecosystems and mitigate climate change. Against the backdrop of these significant ongoing challenges which agricultural production systems will need to address, there can also be more immediate, unexpected challenges to food production and supply. These could include animal disease outbreaks, crop failures, social trends and/or unrest and economic crises around the world. Alternatively, new technologies may emerge which could transform agriculture if implemented appropriately. In this module, you will be exposed to both external and internal speakers on current challenges and opportunities and be encouraged to engage in informed debate on these issues. This module is designed to retain the flexibility to cover current issues at the time of delivery and so the indicative content will necessarily change over the period for which it is validated.

Livestock Production Systems and the Natural Environment

Year of study 4
Code HF
Credits 20
Core/option Core
Module contact [Mr Alan Stewart](#)

The impact that animal production systems have on the environment in which they operate is a critical element of the sustainability of the global ecosystems. The implication of this is that future production systems and their development will be directed by both the biological boundaries and geopolitical constraints. The objective of this module is to understand the global environmental challenges posed by a range of livestock production systems and management, and evaluate from first principles how these impact upon and change the natural environment.

It is expected that you will have a prior understanding of production practices and the scientific principles that contribute to efficient commercial production outputs in relation to current market requirements. A key component of prior learning will be the Natural resource management module that sets out the scientific principles of this subject area.

Advances in Livestock Production Science

Year of study 4
Code HF
Credits 20
Core/option Core
Module contact [Professor Andy Wilcox](#)

Scientific advances in animal science drive improvements in farmed animal performance, product quality, environmental impact, animal health and welfare, and enterprise profitability nationally and globally. This module will appraise the importance, role and applicability of research in animal science in informing and advancing current developments that are prevalent and emerging in livestock production. You will assess the future potential of research to enhance knowledge and understanding within livestock production science whilst demonstrating an appreciation for the limits of research to overcome challenges within the livestock industry.

Agricultural Business Development and People Management

Year of study 4
Code HF
Credits 20
Core/option Core
Module contact [Professor Andy Wilcox](#)

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 you understand the effective management of people.

Alongside the changing workforce, the challenges facing agriculture dictate that successful farm businesses are far more diverse and complex than in the past. This module aims to combine previous farm business management and other modules in a holistic way to produce appropriate solutions to current and future challenges facing agricultural businesses.

Honours Research Project - Agriculture

Year of study 4
Code HF
Credits 40
Core/option Core

The Honours Research Project allows you to consolidate and utilise learning from your taught modules in the design, implementation and reporting of an original research project in an aspect of your degree subject area that is of interest to you, appropriate to your area of study, and that will be of use to you in your learning and career development. You will select a topic aligned with your specific course and will, in conjunction with a supervisor, design, carry out, analyse, and present your research. This module will develop your research skills and puts you at the centre of your own learning and development. Within this module, you will undertake research study design but will also evaluate the ethical and health and safety aspects of your project and will design knowledge transfer material for the dissemination of your research proposal and findings.