



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

UCAS code D410

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 Crop Production Science students are taught by lecturers with extensive industry and research experience to develop sustainable crop 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.

You will soon 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 cropping enterprise and farm managers; and commercial and technical positions in the crop protection, crop nutrition, and fresh produce 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

In your third year you will enjoy at least 12 months of paid employment in a sector of agriculture or the ancillary industries, depending on your individual interests and skills. Placements may involve working for large integrated arable or fresh produce businesses, a crop processor, packer and distributor, or as a field trials officer for one of the major crop protection companies. Recent placement employers include G's Fresh, Syngenta, UPL, KWS, and BASF.

You will usually undertake paid employment for at least 12 months. 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. Students also have the opportunity to access a range of overseas placements, with the support of supporting agents, where possible. Students may undertake placement in the USA, Australia or New Zealand, for example. 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.

What will I learn?

On successful completion of the BSc/BSc (Hons) Agriculture with Crop Production Science award, students will be able to:

- Explain the biological processes that underpin sustainable agricultural production systems.
- Evaluate the impact of agricultural production systems on the environment, the rural economy and wider society.
- Develop and manage sustainable agricultural production systems that can be adapted to address specific social, economic and environmental challenges.
- Identify relevant technologies and apply them within agricultural production systems.
- Identify relevant policy and legislation and apply it within agricultural production systems.
- Explain the relationship between the farming business and the agri-food supply chain.
- Evaluate the influence of global issues on agricultural production systems.
- Develop an evidence-based approach to communicate effectively and sensitively on agricultural issues with diverse groups.

Teaching and learning

- Key principles will be taught in lectures by subject specialists and visiting speakers.
- Small workshops and seminars, lab and farm-based practical sessions will be used to apply the principles from the classroom in a practical context.
- Student engagement and learning experience will be improved through using a variety of learning spaces.
- Directed study will be used to develop life-long learning skills.

Assessment methods

We will assess students' progress using a blend of different methods such as individual and group presentations, technical writing, data handling and analysis, personal development planning and time-constrained assessments. The diverse assessment journey will give students an equitable chance to succeed and develop skills for employment and life-long learning.

Careers

The applied nature of the course and practical experience gained during the placement period will give you skills the industry needs. You could choose from a variety of careers, working for a multi-national company or small rural business as an agronomist, technical representative or trainee arable farm manager, amongst others.

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		Advances in Crop Production Science (HF)20
Assessing the Efficiency of Farming Systems (C4004HF)20	Crop Production Systems (C5002HF)20		Sustainable Cropping Systems and Technology (HF)20
Agricultural Technology and Digital Farming (C4005HF)20	Crop Protection and Nutrition (C5003HF)20		Agricultural Business Development and People Management (HF)20
Agricultural and Environmental Science (C4006HF)20	Crop Physiology and Genetics (C5001HF)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.

Crop Production Systems

Year of study 2

Code C5002HF

Credits 20

Core/option Core

Module contact [Louisa Dines](#)

This module will build on the fundamental principles of crop production from the Level 4 module Introduction to Farming Systems to further develop your understanding of the production processes for specific crops. The module will identify the markets and quality requirements for a range of cereals, combinable break crops, root crops, grass, forage and fresh produce crops commonly grown in the UK and North Western Europe. Appropriate production techniques from establishment through to harvesting and storage for each crop will be explained with a focus on sustainable approaches to production and the integration of precision techniques to aid crop management. The key decision-making timings to optimise production and meet the required quality throughout the production cycle will be identified. The impact of assurance schemes and current regulations on crop production processes will be evaluated.

Students who successfully complete this module will be able to:

- Identify the markets and quality requirements for a range of cereals, combinable break crops, root crops, grass, forage and fresh produce crops commonly grown in the UK and North Western Europe.
- Explain the soil preparation and establishment techniques used for a range of cereals, combinable break crops, root crops, grass, forage and fresh produce crops commonly grown in the UK and North Western Europe.
- Identify growth stages and key agronomic decision-making timings that influence yield and quality during the production cycle of a range of cereals, combinable break crops, root crops, grass, forage and fresh produce crops commonly grown in the UK and North Western Europe.
- Explain the harvesting and storage techniques used for a range of cereals, combinable break crops, root crops, grass, forage and fresh produce crops commonly grown in the UK and North Western Europe
- Evaluate the impact of assurance schemes and current regulations on crop production processes.

Crop Protection and Nutrition

Year of study 2

Code C5003HF

Credits 20

Core/option Core

Module contact [Louisa Dines](#)

As agriculture is challenged to feed a growing global population and simultaneously reduce the environmental impact of food production, efficient and sustainable crop production is increasingly important. Nutritional deficiencies and weed, pest and disease problems impact on crop yield and quality and therefore production costs and efficiency. You will learn how to minimise such losses, starting with the accurate identification of problems in the growing crop and an understanding of the potential impact on production efficiency and marketable yield and quality. Whilst manufactured fertilisers and synthetic crop protection products that have been relied upon in recent decades remain an important part of crop nutrition and crop protection strategies, they are increasingly under scrutiny for their social, environmental and economic sustainability. Therefore, you will learn about alternative strategies and technologies that can help us to manage crops in a more socially and environmentally sustainable way and must be included in our crop nutrition and crop protection plans.

Students who successfully complete this module will be able to:

- Accurately identify nutritional deficiencies and weed, pest and disease problems in growing crops.
- Evaluate the impact of nutritional deficiencies and weed, pest and disease problems on crop production.
- Apply an understanding of the biology of weeds, pests and diseases, crop protection products and cultural controls to formulate integrated crop protection strategies to optimise production within current legislative requirements and good practice guidelines.
- Apply an understanding of crop nutrient needs, fertiliser products and organic materials to formulate integrated crop nutrition plans to optimise production within current legislative requirements and good practice guidelines.
- Identify the technologies that can be used to optimise the performance and sustainability of crop nutrition and crop protection products.

Crop Physiology and Genetics

Year of study 2

Code C5001HF

Credits 20

Core/option Core

Module contact [Dr Edward Dickin](#)

Crop physiology, the science of crop growth and development is the fundamental basis of agricultural production. Understanding the underpinning principles of plant growth, and how it is affected by both environment and production techniques, enables agronomists and farmers to adjust crop management to optimise resource efficiency and financial return. This module will enable the student to explain variation in crop performance and make the required crop management decisions to optimise growth.

Plant breeding, either through conventional or biotechnological means, is essential to the success of crop production. The continual increases in traits positively associated with crop yield, alongside improved quality traits and pest resistance, is attributable to changes in agronomic practice (which is covered in other modules) and ongoing breeding programmes which are guided by knowledge of crop physiology and genetics.

Conventional crop breeding programmes are based on fundamental genetic principles, hence, an awareness of these principles is essential to effectively understand how breeding programmes function. In addition, the advent of modern biotechnological methods to genetically modify crops is becoming increasingly relevant to the scope of and capabilities of crop improvement globally.

Students who successfully complete this module will be able to:

- Recognise how crop growth and development relate to management, weather and the changing climate.
- Predict the effects of management, weather and the changing climate on crop growth and development.
- Identify and explain the role of plant breeding in crop production (including fresh produce).
- Relate the key principles of genetics to the current techniques employed when breeding new crop varieties.

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.

Advances in Crop Production Science

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

This module will focus on the evaluation of the latest research in plant breeding technology and in practices for the management of weeds, pests, diseases and nutrients enabling the student to develop comprehensive integrated crop management plans within the context of legislative requirements and commercial constraints for a range of arable and non-arable crops. It will also extend to the post-harvest management of both arable and non-arable crops and the minimisation of losses during storage. It will build upon the principles of crop production and crop management taught at Level 4 and 5. Upon completion of this module students will have achieved competencies in line with the pre-requisites for access to the BASIS Certificate in Crop Protection which is a statutory requirement for those giving advice on crop protection products.

Sustainable Cropping Systems and Technology

Year of study 4
Code HF
Credits 20
Core/option Core
Module contact [Dr Andrew Watson](#)

In this module, you will examine a range of factors affecting the long-term sustainability of crop production systems both in the UK and globally. Food security and population growth have put unprecedented pressures on production and the environment. This module will encompass sustainable production systems of relevance to UK and NW Europe including regenerative systems, low input and high input systems. You will investigate how the industry can help protect key resources such as soil and water within cropping systems whilst reducing the reliance on synthetic inputs. You will also consider measures to promote biodiversity and help mitigate and adapt to climate change whilst continuing to provide sufficient nutrition for a growing population.

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.