RISEHOLME College

Validated by:

UNIVERSITY OF LINCOLN

BSc (Hons) Precision Agriculture

Applicant Programme Guide

Contents

Award Details

Programme	BSc (Hons) Precision Agriculture
Duration	Full time (3 years)
Validating Partner	University of Lincoln
Location of Study	Riseholme

Entry Requirements

Applicants are required to have:

- **A minimum of 104 UCAS points**
- **GCSE English Language at grade C/4 or above, or an equivalent qualification**
- **An appropriate academic reference**

UCAS points may be from qualifications such as A-Levels, BTEC Level 3 Extended Diplomas, Access to HE Diplomas, and City and Guilds Advanced Technical Diplomas amongst others. Please use the UCAS Tariff points calculator to determine the UCAS points value of your qualifications: https://ucascomsb1.ucasenvironments.com/ucas/tariff-calculator

- Life and/or experience of non-traditional students will be taken into account when considering applications. The successful completion of an entry task may be required when considering applications without the required formal entry qualifications.
- If first language is not English, or a Tier 4 student visa to study is required and GCSE grade C/4 English or equivalent is not held, English language proficiency level such as International English Language Testing System (IELTS) 6.0 overall (with a minimum 5.5 in each skill) will need evidencing.
- Advanced entry may be possible due to prior experience or certificated learning; applicants will be invited to complete the accreditation of prior learning approval process.

How to Apply

Full Time Application Route	Online via UCAS: www.ucas.com
Course Code	PA21
Institution Code	B37
Campus Name (Code)	Riseholme (R)

1. Introduction

The BSc (Hons) Precision Agriculture programme sets out to produce graduates who will be the farmers and agricultural technologists of the future. You will have the skills and knowledge required to develop and manage adaptable, innovative, sustainable and successful business ventures within the agriculture sector.

Across both Level 4 and Level 5 a broad spectrum of modules will be delivered to ensure that you have the key attributes to go into higher level graduate roles. At level 5 options are offered to enable you to select specific routes of learning.

The farm facilities are established at both the Bishop Burton and Riseholme campuses, accompanied with a breadth of current equipment for field and laboratory-based research projects and teaching. These resources have collectively seen staff and student research be published and presented with peer reviewed journals and national and international industry conferences.

The college has a Centre for Agricultural Innovation (CAI), led by the HE Academic lead for agriculture which focuses on working with industry on research projects across both college campuses.

During the first year of the programme, you will undertake an applied precision agriculture module which will benefit from our extensive industry links in delivery, this may include local farmers or estates, machinery dealerships, food producers, advisory companies and feed and grain merchants. This module will ensure we provide you with key skills to be operational in any farming situation.

You will be able to operate key software packages such as Farmplan Gate Keeper and Livestock Manager which is utilised within 80% of UK farming businesses in the UK, enabling you to evaluate on farm data to reduce inputs and improve out puts on the farm which is seen as a key outcome for any farm business manager.

You are effectively prepared for academic study by undertaking a series of academic, professional and research skill related modules over the two years. A Level 4 introductory research analysis modules further develops ability to analyse and evaluate data sets using packages, as well as ability to investigate an idea, collectively designed to support progression to higher levels of study and research. Research is a key theme across all levels ensuring our graduates are inquisitive and equipped to apply new techniques in a work environment.

The program sets out to future proof you for the ever-changing agricultural sector through the development of the Institute of Technology ensuring all graduate are equipped with high level technology skills required in a fast-changing sector.

2. Programme Aims

The programme aims to:

- *produce students with a sound academic understanding of the broad range of areas relating to global and regional crop and livestock production and the underpinning scientific, economic and business principles.*
- *produce proactive and independent students who are able to apply and develop their own perspectives and explore alternative solutions within the dynamic agriculture sector.*
- *develop graduates with the skills and knowledge to be effective managers within agricultural and environmental businesses.*
- *provide applied learning to equip students with vocational skills essential for entering a diverse range of employment opportunities within the global agriculture sector.*
- *facilitate graduates into and through high level employment in agriculture and related sectors, including technological advances*
- *facilitate the development of transferable skills which allow graduates to apply their knowledge and skills to the social and environmental context of agricultural management.*
- *provide graduates with the skill to use, evaluate and implement new technologies with in the agricultural sector.*
- *ensure graduates are empowered to make advancement in sustainably managing the environment through technological advances.*

3. Programme Structure

3.1 Programme of Study

The academic year is split into two semesters, each of 15 weeks duration. The structure of the programme of study is shown in the table below, with the credit weighting in brackets. Please note that option modules will run where there are sufficient student numbers, otherwise an alternative module may be offered.

Year 1 (Level 4)	
Semester 1	Semester 2
Academic, Employment and Professional Skills (15)	*Plant and Soil Science (15)*
Fundamentals of Business (15)	*Crop Production (15)*
Introduction to Research Skills (15)	*Applied Precision Agriculture (15)*

Livestock Production (15)	
Mechanisation (15)	
Year 2 (Level 5)	
Semester 1	**Semester 2**
Option 1: Livestock Science (15) or Robotics and Automated Technology (15)	
Option 2: Agronomy (15) or Precision Technology in the Wider Sector (15)	
Agriculture and the Environment (30)	
Financial Management and Planning (15)	*Enterprise and Entrepreneurship (15)*
Research Methods and Analysis (30)	

Year 3 (Level 6)	
Semester 1	**Semester 2**
Dissertation (30)	
Integrated Farm Management and Technology (30)	
Rural Strategic Business Management (30)	
<u>Option</u> *Advanced Agronomic Technology (30)* *or* *Advanced Livestock Science (30)* *or* *Rural Operations Management (15 – Sem 1) and Rural Marketing Management (15 – Sem 2)*	

3.2 Work Based Learning

Although there is no formal work experience required for this programme you will need to undertake 6 weeks of placement between level 5 and 6.

3.3 Modules

You will study the following modules throughout your programme:

<u>Level 4 – All Core Modules</u>

Academic, Employment & Professional Skills

The module introduces key professional and academic skills that are integral for employment and indeed life.

Applied Precision Agriculture
This module introduces you to practical aspects of precision agriculture. It will involve work on the College's farm and formal lectures to consolidate a range of skills necessary for positions of responsibility within the industry. You will put the theory that has been developed within other modules into an applied setting. Gaining a wide range of skills and practical knowledge will be favoured by employers, particularly with the knowledge surrounding precision technologies. Valuable experiences are to be gained from external sources, including visits and guest speakers; and theory of health and safety and employability will be assessed.

Crop Production
This module will provide the basic understanding of crop production practices both within the UK and around the world. The module will focus on a wide range of crop productions systems including food and non-food crops, along with producing crops to meet market requirements while ensuring sustainability, promoting environmental protection and ensuring profitability.

Fundamentals of Business
Some basic understanding of external and internal factors impacting on businesses is crucial to rural business personnel, regardless of area of specialisation. This module explores the question 'What is a business?' and investigates business entities, structures, functions, stakeholders and objectives and students will explore the political, social, economic, technological environment of a business. It also introduces resource management, workforce planning and finance as well as marketing issues. It will give an understanding of leadership and management, including motivation.

Introduction to Research Skills
Success as a HE student relies upon additional reading of the subjects, topics and modules being studied. A large proportion of this reading is often comprised of empirical, research-based literature, and understanding the information being conveyed is essential for increasing knowledge and completing assessments. Subsequently, this will have a positive effect on post-graduate success. Furthermore, having the experience and skills to be able to conduct research and present information will allow the students to contribute to the already existing literature base and further develop their understanding of the terminology.

It introduces the students to key terminology used in research-based literature to ensure students are improving their knowledge through their own reading. The module will also allow students to demonstrate some of the skills used in the process of conducting research.

Livestock Production
This module will introduce the basic principles of livestock production enterprises, and the species typically farmed within the UK. Identification of the key

similarities and differences found within the anatomy and physiology of production species, including sheep, cattle, pigs and poultry will be considered. An introduction to the various farming methods found within the UK, including intensive and extensive production systems and key housing and husbandry requirements will also be discussed. In order for livestock enterprises to be successful and meet the requirements of the product markets, key performance indicators can provide targets and useful planning tools to enhance the productivity, efficiency and sustainability of livestock. Furthermore, the utilisation of technologies is key to aid the livestock industry, and all such aspects will be considered within this module.

Mechanisation
This module is designed to assess the machinery needs for a farm and develop an understanding of how requirements can be fulfilled. The impacts of the machinery are analysed in terms of effects on soil structure, crop performance and the environment. This links in with the plant and soil module in terms of managing soil for the production of sustainable crops and livestock. The module also looks at technology being used in the livestock sector to improve efficiency and sustainability with an emphasis on robotic equipment and data collection. Practical elements will be covered to ensure you can operate machinery safely and develop an understanding of the equipment used for guidance and data collection.

Plant and Soil Science
The soil part of this module will give an understanding of concepts such as identifying soil types and how this relates to management practices. It will focus on the soil environment including soil fauna and flora, and also discover the role soil plays in relation to climate change. The plant part of this module will examine the fundamental aspects of plant biology with a clear link to crop production. It will focus on plants produced within the UK and allow comparison with crops produced globally. Methods of crop breeding will be discussed and how they can be incorporated into the industry.

<u>Level 5 – Core Modules</u>
Agriculture and the Environment
The module introduces the main principles in regards to environmental management and regenerative agriculture. The module will focus around climate change and environmental management which work hand in hand within agriculture. Government policy of both newly introduced and old will be looked into which will show how previous and future decisions have and will be made in regards to cropping, cultivations and environmental management techniques.

Enterprise and Entrepreneurship
This module will focus on giving you the tools and knowledge to write a business plan that is suitable for investing in. This is a project-based module in which a business plan for a new/existing venture will be researched and developed. An entrepreneurial idea will be selected and developed into a written and detailed business plan. The process of opportunity recognition, start up and growth will be developed.

Financial Management & Planning
This module introduces the basic principles of finance and financial concepts at a tactical level, including the production of financial documentation. The module develops to discuss and evaluate financial strategies which rural centres can utilise to develop financial management, providing you with the opportunity to develop a theoretical understanding of financial principles, and their application to a range of practical rural applications.

Research Methods and Analysis
Knowledge of research methods and analysis techniques is an imperative part of all degree programmes. This module will discuss the research process of identify problems, collecting and processing data, analysing the findings and producing results, producing conclusions and recommendations for further work. It provides an understanding of experimental design from concept to completion of a dissertation. A good working knowledge of experimental statistics is required to analyse research papers for other modules. The module will provide the skills required for the collection, analysis and interpretation of data and enable students to understand and use computer graphics and statistical software.

<u>Level 5 – Option Modules</u>
At Level 5 you will choose two option modules from the following:

Option 1: Livestock Science or Robotics and Automated Technology
Option 2: Agronomy or Precision Technology in the Wider Sector

<u>Level 5: Option 1</u>

Livestock Science
This module enhances the skills and knowledge of health, breeding and nutrition associated with production species. The key aspects of health monitoring including the signs of ill health for a variety of infectious and non-infectious diseases will be covered, alongside methods of controlling and managing disease within livestock enterprises. In order to enhance the productivity and efficiency of livestock the breeding and nutrition of the stock is key. Therefore, within this module, a variety of reproductive technologies are to be considered, and links to the success and practicality of such technologies will be assessed. Ensuring that key nutrients are available to stock within various enterprises is key for healthy growth and

development, therefore through practical feed analysis, the macro and micro nutrients available to stock, from various feed sources will be analysed.

Robotics and Automated Technology
This module aims to give you an in-depth, realistic outlook on how robotics and automation can be deployed profitably on farms. You will appraise which technologies and which farm enterprises are most suitable for robotic systems, learn about how robots work and are controlled, and what other changes on farms follow adoption of robotic technology.

Level 5: Option 2

Agronomy
This module looks at the agronomic factors that affect the crop rotation on farms. Emphasis is placed on the correct identification and control of pests, diseases and weeds using sustainable methods. These methods have a strong link to integrated crop management practices. The sustainable use of crop protection and nutritional products will be discussed including testing, sustainable sources, application, monitoring and legislation. Soil management for crop production through irrigation and drainage systems will be linked to sustainable use of products and integrated crop management principles.

Precision Technology in the Wider Sector
This module looks in more depth at precision farming services, how they evolved, how data is collected and processed, how precision farming services differ, what trends can be identified, and how precision systems can be applied in farming businesses in developed and developing countries. This module puts precision farming into a wider context, providing students with the understanding they would require to work in the development of precision farming services and technology.

Level 6
Dissertation
The dissertation provides you with an opportunity to work independently, at length, on a topic that particularly interests you. It is also an effective means of research training, which helps the development of advanced intellectual skills such as evaluation, analysis and synthesis, as well as management skills. You have the opportunity to study a topic in a specified area of research interest and which reflects the interdisciplinary nature of their degree programme, in greater depth. The module allows you to undertake a substantive individual project to explore a specific area of interest in greater depth than is possible anywhere else in the programme.

Integrated Farm Management and Technology
Due to the rapidly changing agricultural landscape, it is essential that you are able to recognize and adapt to change, in order to produce the food and commodity products for the future in a sustainable way. This module allows you to develop their individual and group working skills to critically evaluate a case study farm based on IFM principles. The case study farm will include elements of crop production, livestock production, renewable energy and diversification. You will be required to critically evaluate the technological innovations available to farmers to improve production efficiency and sustainability. The discussion around the use of regenerative farming methods, will aim to reverse the damage caused to land and the environment, by previous farming policy, with the aim of improving the countryside for farming, climate change mitigation, wildlife habitat as well as leisure and tourism activates.

Rural Strategic Business Management
To be successful, organisations require a well-planned and properly executed strategy. This module provides you with the opportunity to develop a sound understanding of rural business management, through the application of the principles of farm and generic business management, to a series of real rural case studies, culminating in the completion of the Institute of Agricultural Management Farm Planner of the Year competition.

Whilst the vast majority of organisations already have a strategic plan, there is a high likelihood that it will require revision in light of the current economic climate. This module explores the strategy process, strategic thinking, strategic formulation, strategic change as well as business planning. How to be the most strategic thinking business planning manager, means being one step ahead of your competitors.

Level 6 – Option Modules

At Level 6 you will choose 30 credits from the following modules:

Advanced Agronomic Technology (30 credits) or
Advanced Livestock Science (30 credits) or
Rural Marketing Management (15 credits) and Rural Operations Management (15 credits)

Advanced Agronomic Technology

This module is designed to follow on from previous L5 Agronomy module to further develop knowledge required for the BASIS and FACTS exams. It will focus on the identification and sustainable control of pest, disease and weeds in arable crop rotations. Control methods will focus on an integrated crop management approach using cultural biological and chemical means. Crop nutrition and soil management will focus on sustainable use of organic and inorganic fertilisers, soil microbial responses, plant and soil testing and identification of symptoms of deficiency. It will also cover the safe transport, storage and use of pesticides and fertiliser products and will link to legislation used to protect the environment, operatives and consumer. This will include safety in the food chain including the use of residue testing.

Advanced Livestock Science

This module will advance the current understanding of the livestock industry and animal science, to incorporate a wider perspective of the industry and the current and future developments that are being made to enhance the productivity and sustainability of the industry. The module will commence with an overview of the main concerns within the current livestock production enterprises, and will develop a scientific and working knowledge of the biotechnologies and management practices that can improve livestock efficiency. Further depth of evaluation will also be developed with regards to the management and technological advances, to consider wider concepts including welfare and ethical considerations for the animals in production.

Rural Marketing Management

Marketing is a management function, a managerial process and a business philosophy that places the customer at the core of the organisation. This module is designed to enable you to develop an appreciation of the role of marketing and the management of marketing functions in the modern organisation. The marketing process entails activities aimed at identifying and creating value for the organisation's current and prospective customers and to capture a share of that value for itself.

Rural Operations Management

Operations Management refers to the activities, decisions and responsibilities of

managing the resources which are dedicated to the production and delivery of products and services. It is about the human capacity to organise all of the operations that underpin the modern world: transportation, the generation of energy, retailing, the production of goods, the provision of medical and educational services and so on. Indeed, few activities have as much impact on the quality of our lives. Even if you are not planning on a career in the operations area, having a solid understanding of the role of operations in an organisation can be of substantial benefit to you.

4. Delivery

4.1 Teaching and Learning Approach

	Contact Time	*Independent Study Time*
Approximate hours per week:	*16*	*25-30*
Delivery includes:	*Lectures, seminars, farm practicals and tutorials. Sessions may be delivered in person or using remote platforms.*	*Reading around the subject, preparing for taught sessions and preparing for and completing module assessments and revision.*

You can expect:

- *Experienced, supportive and motivated staff with both academic and industrial experience.*
- *Access to an Online Virtual Learning Environment called ilearn, which is used to enhance and facilitate teaching and independent learning on all programmes.*
- *Guest lectures, demonstrations from a range of visiting speakers and offsite trips.*

4.2 Learning Resource Centre

Students will be required to undertake reading, research and investigations outside formal sessions, in order to gain a deeper understanding of the subjects. The Learning Resource Centre (LRC) at our Showground campus is a hub of physical and online resources. With over 32,000 items available to loan, the LRC provides access to over one thousand journal titles from a range of databases, specialist collection journals and hundreds of eBooks. Laptops and PCs are available to borrow or pre-book, with free wifi across both of our campuses. Need a hand? Our friendly and knowledgeable staff are available to help.

The LRC opening hours are:

Monday: 8.30AM – 5.00PM
Tuesday: 8.30AM – 5.00PM
Wednesday: 8.30AM – 7.00PM
Thursday: 8.30AM – 7.00PM
Friday: 8.30 – 5.00PM
Saturday: 9.00AM – 2.30PM

Opening times may vary at the beginning/end of terms and during holidays. Opening hours will be updated on the LRC iLearn page. Electronic resources are available 24 hours a day, 365 days a year.

4.3 Assessment and Feedback

The programme will incorporate a variety of assessment methods across each academic year. The mix of assessments will seek to challenge and evaluate your knowledge, understanding and skills. Assessments for this programme may include written assignments, case studies, practical assessments, presentations, project-based assessments, time constrained assessments and invigilated exams.

Tutors provide support for assessments in class. There will also be opportunity for formative assessment and feedback during the delivery of each module to monitor learning, and to support and prepare you for the summative assessments which make up the module. Feedback on your summative assessments will be given which will allow you to guide efforts and activities in subsequent modules.

4.4 Timetables

You can expect to receive your timetables during induction week.

4.5 Extra-Curricular Work Experience

Relevant extra-curricular activity and/or work experience is encouraged of all students in order to enhance learning.

5. Facilities

Nestled in the Lincolnshire countryside, just outside of Lincoln, Riseholme College encompasses the Riseholme Park campus and Showground campus, just two miles away from each other.

Riseholme College has extensive practical facilities offered at the farm, including beef and sheep herds, combined cropping covering wheat, barley, oilseed rape, maize, grassland and conservation areas this totals in access of 200 hectares.

Extensive investment through the Institute of Technology has seen the purchasing of variable rate drills, automated systems, unmanned aerial aircraft and variable rate fertilizer spreaders. Collectively, these facilities support a breadth of field-

based research activities, develop practical skills and support live group projects, as well as providing extensive enrichment and potentially extra-curricular activity.

The Science Centre facilitates a variety of laboratory practical sessions within this programme to prepare students for in depth analysis and use of equipment, providing student with skills applicable for working in a range of spheres within the agricultural industry. Equipment applicable to the practical setting includes; FLIR thermal imaging camera, drones, field soil pH meters, Sugar Brix Refractometer, Electronic Grass Plate Meter and Professional Soil Testing Kit and Photometer.

Our Showground Campus includes classrooms, science labs, an animal management facility, agriculture and engineering workshops, a learning resource centre, refectory and student services office. We have a Sport and Health Science Centre, complete with gym, multi-use sports hall and 3G flood-lit pitch, and an Agri-Tech, Health and Nutrition Centre.

If you need advice on finance and bursaries, information about travel or how we can support your mental health, Student Services is your one-stop-shop.

In addition, Riseholme's status as a centre of excellence for high level skills training as part of the government's multi-million-pound Institutes of Technology (IoT) initiative is generating further investment in facilities and resources. Such facilities give us the platform to deliver an unrivalled range of hands-on, practical courses which give our students the skills and knowledge they need to succeed.

6. Student Skills and Support

Studying at degree level requires key academic skills such as critical thinking, analysis and problem-solving. You will need to learn how to navigate the Learning Resource Centre, develop your IT skills and refine your study skills such as note-taking, revision, independent study and research, and personal skills such as time-management, motivation and self-reflection. You will be embarking on a journey not only to a qualification, but to enhancing your future career prospects. Throughout your programme you will be supported in building these skills within your taught sessions and via online resources, induction sessions, academic development seminars, employability week, the Careers Service, the HE Study Skills Team and the Life Coaches Team.

The HE Study Skills Team provides:

- *Informal study skills support for all HE students.*
- *Specialist support for those with a diagnosed specific learning difficulty e.g. dyslexia. This support can be booked on a 1:1 basis, via drop-in or remotely (online).*

- *A range of resources such as PDF links to a variety of study skills topics, for example, referencing.*
- *Support around Successful Online Study, as well as a monthly newsletter, with hints and tips to help you achieve.*
- *A Study Skills course is available to all new HE students, easing the transition from level 3 to provide you with the skills required for HE study.*
- *Equipment such as overlays for visual stress (Meares-Irlen syndrome), Dictaphones and TextHelp 'Read and Write Gold', available to all students on campus.*
- *Information on the application process for Disabled Students Allowance (DSA).*

If you have any questions you would like to ask the team prior to application please contact them on HEStudyskills@bishopburton.ac.uk.

The Life Coaches Team can help you discover the best you. They can provide support across a wide range of life skills including:

- *Emotional and behavioural: helping you to understand and overcome personal barriers so you can achieve your full potential.*
- *Mentoring and coaching: individual support programmes, tailored to specific needs.*
- *Social engagement and interpersonal: career coaching to help develop confident, professional and industry ready individuals, who are armed with the interpersonal skills to engage in the professional world.*
- *Health, wellbeing and resilience: focus on all aspects of physical and mental health and wellbeing to develop resilience and life skills and life balance.*

7. Fees, Equipment and Additional Costs

- *For up to date information on tuition fees and financial support please visit: https://www.riseholme.ac.uk/degree/finance*
- *You will need to buy a white college laboratory coat for laboratory practicals available via the college online shop.*
- *For all farm related practicals students will need; safety boots, wellingtons, overalls, wet weather gear.*
- *Trips and short courses may also be offered at extra cost.*
- *A suitable electronic device e.g. a laptop or tablet, with internet connectivity is required for accessing online learning.*
- *On successful completion of the programme, you have the opportunity to graduate at a ceremony wearing formal dress. The hire of the formal dress is an additional cost.*

8. Graduate Opportunities and Progression

8.1 Graduate Opportunities

Students graduating from this programme could follow careers in farm management, machinery dealerships, as technology programmers and trainee agronomists.

8.2 Progression

The programme is also designed to enable you to progress to Level 7 study, such as a Masters in Agriculture.

9. Contact Us

If you have any further questions please do not hesitate to contact the Recruitment Team.

Telephone	*01522 304600*
Email	*enquiries@riseholme.ac.uk*
Address	*Showground Campus* *Horncastle Lane,* *North Carlton, LN1 2ZR*

The information in this guide is correct at time of publication. Any amendments to the content of the programme and modules will be made formally through a modification process with the awarding body. Changes will usually only be made to improve the existing provision for example in response to changing industry requirements. Any changes will be communicated to applicants/students as soon as they have been formally approved.