



FdSc Agriculture (Precision Crop Technology)

Applicant Programme Guide

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Award Details

Programme	FdSc Agriculture (Precision Crop Technology)
Duration	Full time (2 years) or Part time (3 years)
Validating Partner	University of Lincoln
Location of Study	Riseholme

Entry Requirements

Applicants are required to have:

- A minimum of 80 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	T43F
Institution Code	B37
Campus Name (Code)	Riseholme (R)
Part Time Application Route	Online via the College Website: https://www.riseholme.ac.uk/college/apply

1. Introduction

Precision Crop Technology is widely accepted as the future of UK and Global Farming, helping farmers optimize inputs to feed a growing global population. You will be taught about data sensors, connected devices and remote-control tools to ensure they are technology ready for employment. The programme aims to optimize field-level management with regard to crop science (by matching farming practices more closely to crop needs e.g. fertilizer inputs) and environmental protection (by reducing environmental risks and footprint of farming e.g. limiting leaching of nitrogen).

A key component of this programme's approach is the use of information technology and a wide array of items such as GPS guidance, control systems, sensors, robotics, drones, autonomous vehicles, variable rate technology, controlled traffic farming, GPS-based soil sampling, automated hardware, telematics, and associated software. You will make use of satellite technology allowing real-time management of crops and fields, which helps to monitor and reduce the environmental impact of farming.

Precision crop technology as a crop management concept has the potential to address many of the increasing environmental, economic and public pressures on arable farming. Benefits are attained due to increased yields and/or reduced costs through the efficient use of resources, preparing graduates to contribute to the wider goal of sustainable intensification. This programme reaffirms that precision crop technology graduates can play an important role in the UK to meet the increasing demand for food, feed, and raw materials while delivering sustainable intensification. Across both levels 4 and 5 a broad spectrum of modules will be delivered to ensure you have the key attributes to go into higher level graduate roles or prepare you to go on to level 6 study.

The programme sets out to produce graduates who will be the farmers of the future. You will have the skills and knowledge required to develop and run adaptable, innovative, sustainable and successful business ventures within the agriculture sector. The programme sets out to future proof you for the ever-changing agricultural sector.

2. Programme Aims

The programme aims to:

- *produce graduates capable of being at the forefront of modern precision farming techniques.*
- *enable graduates to justify inputs and assess the impact of their achievements on the environment.*

- enable and empower graduates to explore and implement modern techniques and production methods, relating to integrated crop management to further develop environmentally sustainable systems of crop production.
- produce graduates with a sound academic understanding, knowledge and skills of the broad range of areas relating to crop production and the underpinning scientific, economic and business principles.
- produce graduates capable of applying agricultural science to their farming practices in order to meet sustainability demands, high quality products and increase farming efficiency.
- produce proactive and independent graduates who are able to apply and develop their own perspectives and explore alternative solutions within the dynamic agriculture sector.
- provide applied learning in order to equip graduates with vocational skills essential for entering a diverse range of employment opportunities within the agriculture sector.
- facilitate graduates into and through employment in the agriculture sector.
- develop graduates with the skills and knowledge required in agriculture to be effective contributors in the industry.

3. Programme Structure

3.1 Programme of Study

The academic year is split into two semesters, each of 15 weeks duration. An indicative structure of the programme of study is shown in the table below. Credit weightings are shown in brackets.

Year		Semester 1	Semester 2	Level
FT	PT			
1	1	Academic, Employment and Professional Skills (15)	Plant and Soil Science (15)	4
		Industry Skills for Agriculture (30)		
		Precision Crop Technology (15)		
		Mechanisation (15)		
2	2	Fundamentals of Business (15)	Crop Production (15)	5
		Financial Management and Planning (15)	Enterprise and Entrepreneurship (15)	
		Precision Technology in the Wider Sector (15)	Introductory Research Analysis (15)	

3	<i>Robotics and Automated Technology (15)</i>
	<i>Agronomy (15)</i>
	<i>Agriculture and the Environment (30)</i>

3.2 Work Based Learning

100 hours of external work experience are required in year one.

3.3 Modules

You will study the following core modules throughout your programme:

Level 4

Academic, Employment & Professional Skills

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

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 you 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.

Industry Skills for Agriculture

This module introduces you to practical aspects of 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. Further development of a range of these skills will be gained through a placement period within industry. You should seek a work placement which is not your normal place of work. This gives greater potential for developing new knowledge and skills. Furthermore, it shows a wider range of work experience which is likely to be favourable to employers.

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. Following on from this, methods of crop breeding will be discussed and how they can be incorporated into the industry.

Precision Crop Technology

This module covers the range of precision technology equipment in use for precision crop farming. It covers the identification, purposes and principles of a range of precision agricultural machinery and their operation. It goes further in introducing equipment used for global positioning, satellite imaging and mapping. It also addresses the operation and maintenance of autosteer, sensing equipment and unmanned aerial vehicles. It is a module that should be studied by anyone involved with precision crop technology. You will investigate the principles of precision agriculture, designing and applying plans to influence sustainable agriculture.

Level 5

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.

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.

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.

Introductory Research Analysis

Knowledge of research methods and analysis techniques is an imperative part of all degree programmes. This module will discuss the process of collecting and processing data, analysing the findings and producing results. In addition, 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 analysis and interpretation of data and enable you to understand and use computer graphics and statistical software.

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 you with the understanding you would require to work in the development of precision farming services and technology.

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.

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 and Support

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 you will need safety boots, wellingtons, overalls and 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 machinery dealerships, machinery operators, as technology programmers and trainee agronomists.

8.2 Progression

The programme is also designed to enable you to progress to Level 6 study, such as the BSc Precision Agriculture (Top Up) at Riseholme. You can find further details on all of our programmes on our website <https://www.riseholme.ac.uk/degree/subjects>.

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.