



BSc (Hons) / BSc Agriculture with Mechanisation (Top-up)

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| UCAS code | BSc: D495 BSc (Hons): D49T |
| Institution code | H12 |
| Duration | 1 year (full-time) |
| Start date | September 2022 |
| Location | Harper Adams University campus* |

The course

Having completed a Foundation Degree or HND programme in Agriculture with Mechanisation, you may wish to top-up to either a BSc or BSc (Hons) degree, by studying full-time for a further academic year to specialise further in the area.

Entry requirements

- Top-up applicants must have achieved an average of 55% in their Foundation degree to apply for BSc non-honours and 60% to apply for BSc Honours.
- Applicants must have completed a full year's placement as part of their course of study or two years of full-time relevant employment out with the family business after their course.
- In addition to meeting the foundation degree requirements, applicants must also satisfy the GCSE and Level 3 entry requirements of our own Foundation degree courses.

A-level entry requirements

- **Entry requirements for 2022 entry are not currently available. Please contact Admissions for advice**

Teaching and learning

What you study

Top-up programmes are structured around lectures, tutorials and practical classes designed to augment material covered in previous studies and allow students to develop the subject expertise and depth of knowledge required at BSc and BSc (Hons) degree level.

Teaching and learning

Top up courses at Harper Adams involve a combination of lectures, tutorials, workshop and laboratory

sessions as appropriate for the subject area, together with use of the University Farm to demonstrate principles in practice and the application of scientific, technological and mechanisation principles to commercial agricultural and food production. In addition, the university has extensive links with other agricultural and food related businesses, and external visits and outside speakers are integrated into the programme. Students are expected to apply the skills acquired to solve real-life problems, such that on completion they are able to demonstrate both academic ability and commercial application, which is a combination highly valued by employers. As part of the programme students undertake a dissertation in a subject area of their choice.

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

Assessment methods

Assessment is via a balance of course work and examination; this allows individuals to play to their strengths if they are better at course work than examinations or vice versa. Types of assignment include appraising production systems on the University Farm, a team based engineering design project, farm mechanisation case studies, engineering laboratory based studies and literature based reviews. Format of assignments varies and includes written reports, essays, technical notes, presentations and oral examinations. Students receive written feedback on all course work to help them improve.

What will I study?

BSc (Hons) Top-up

| Year 1 | |
|---|----|
| Honours Research Project (HRPROJ15) | 15 |
| Research Methods (C5005C17) | 15 |
| Sustainable Crop Production Systems (C6014C17) | 15 |
| Science Technology and Information Systems for Agriculture (E6013C17) | 15 |
| Team Enterprise Project (E6014C17) | 15 |
| Measurement and Control (E6009C17) | 15 |
| Crop Protection and Technology (C5003C17) | 15 |

Honours Research Project

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| Year of study | 1 |
| Code | HRPROJ15 |
| Credits | 15 |
| Core/option | Core |

Please contact the course manager for details of this module.

Research Methods

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|-----------------------|----------------------------------|
| Year of study | 1 |
| Code | C5005C17 |
| Credits | 15 |
| Core/option | Core |
| Module contact | Dr Edward Dickin |

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

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

While the intended learning outcomes are common to all students across the University, this module provides discipline specific focus with content, learning and assessments that are tailored for

subject/course needs, which will then lead to value interpretation and communication of research outcomes.

Sustainable Crop Production Systems

Year of study 1
Code C6014C17
Credits 15
Core/option Core
Module contact [Dr Martin Hare](#)

This module examines the factors affecting the sustainability of agriculture and takes a holistic view of how farming methods and systems can address these factors. The module deals primarily with cropping systems as it is designed to allow students with a crops focus to apply their technical knowledge of production practices within a sustainability context. The module therefore builds on, and brings together, elements and prior knowledge obtained from previous study and experience. The main theme within the module will be the concept of sustainable intensification and the integrated farm management production system. The role of agriculture in biofuel production will also be explored.

Science Technology and Information Systems for Agriculture

Year of study 1
Code E6013C17
Credits 15
Core/option Core
Module contact [Dr Simon Woods](#)

Mechanised agriculture has seen a shift towards the integration of agricultural science, machinery and computer based decision support systems. The large volumes of data produced by these systems needs to be utilised effectively to make the use of such systems financially viable. This module will build upon the level 5 module Farm Machinery Technology and Management and will complement the level 6 module Measurement and Control, by examining the relationship between machines, computer based applications, sensor information and its relevance and usefulness to the farm manager.

Team Enterprise Project

Year of study 1
Code E6014C17
Credits 15
Core/option Core

The module aims to give the student experience of involvement in a team when tackling a multi-disciplinary engineering/mechanisation problem and thereby enhancing team skills. It relates prior learning to the management and execution of a defined multi-disciplinary project. Each team of students' project is generally sourced from companies within the agricultural engineering industry. These projects are technical and commercial in nature. Teams investigate an allocated problem and then give a presentation to the sponsoring company towards the end of the academic year.

Companies provide background information, details of the problem, and some references for the team at the outset. If there are any other requirements, in addition to the final report, these will also be made clear at the start of the project. Tutorials on project management and additional educational material will be provided by the supervising staff as appropriate and where necessary.

Measurement and Control

Year of study 1
Code E6009C17
Credits 15
Core/option Core
Module contact [Dr Sven Peets](#)

This module builds upon the principles of electrical science studied in the **Hydraulic Power and Electrics** module. It covers the range of instrumentation used for engineering data acquisition and investigates the use of Programmable Logic Controllers (PLCs) for control. This is intended to equip the students with a level of competence and understanding of these items of equipment to enable them to actively participate in the **Group Enterprise Project**. It also investigates the use of Global Positioning Systems, automatic steering, agricultural field robotics, and CANbus based technology for control.

- Select a suitable instrumentation system, apply it to a given task and evaluate its effectiveness.
- Evaluate collected data for reliability, noise and resolution.
- Appraise the appropriateness of precision farming technology for a given task.
- Assess the suitability of agricultural field robots for a particular job.

Crop Protection and Technology

Year of study 1
Code C5003C17
Credits 15
Core/option Core
Module contact [Dr John Reade](#)

Although considerable improvements have been made over the last half a century, loss of yield and quality still represent by far the largest constraining issues facing crop production. This module allows students to fully investigate integrated and sustainable crop protection solutions to address this. An integrated approach needs to synergistically consider physical, cultural, biological and chemical approaches to the management of weeds, pests and diseases. Accurate identification is vital, and a full understanding of the lifecycles and associated integrated management of weeds, pests and diseases is essential for using pesticides efficiently, for the reduction of pesticide resistance and to make crop protection more environmentally acceptable. Current legislation requires that all pesticides are approved and that all advisors and users of pesticides are competent to perform the duties required of them. Persons employed in production agriculture, who may be involved with the use of pesticides, should therefore be fully conversant with the principles and practice of pesticide use and be fully aware of the potential hazard they pose to operators, consumers, wildlife, the environment and to cropping systems. In addition, students involved in the planning, development or assessment of pest management programmes require a thorough grounding in the principals involved in pesticide formulation and application. Precision detection, mapping and application in crop protection (and other new technologies) will be discussed throughout the module.

BSc Top-up

Year 1

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| Degree Review Project (DRPROJC17) | 15 |
| Sustainable Crop Production Systems (C6014C17) | 15 |
| Science Technology and Information Systems for Agriculture (E6013C17) | 15 |
| Team Enterprise Project (E6014C17) | 15 |
| Measurement and Control (E6009C17) | 15 |
| Crop Protection and Technology (C5003C17) | 15 |

Degree Review Project

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|----------------------|-----------|
| Year of study | 1 |
| Code | DRPROJC17 |
| Credits | 15 |
| Core/option | Core |

Although Ordinary Degree students are not required to engage in the research based major projects completed by honours degree candidates, it is necessary that they display the ability, at Honours level, to learn independently and display the skills required for lifelong learning; to demonstrate awareness of the provisional nature of facts and principles and to marshal evidence and apply it in a balanced way in an argument and to draw soundly based conclusions. The development of these skills is the purpose of this module.

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