Date: 08-12-2024

BSc (Hons) Veterinary Bioscience (accelerated programme)

UCAS code	D303
Institution code	H12
Duration	2 years full-time (accelerated)
Start date	September 2025
Location	Harper Adams University campus

Please note: There are only 50 places available for September 2025 entry.

This course aims to provide the scientific grounding and work experience needed to support graduate entry into Veterinary Medicine courses. But it would also interest to those wishing to move into other animal-related professions.

You will develop a strong understanding of the science behind improving the health and welfare of animals - focusing on animal biology and physiology to understand animal health and diseases.

You will cover nutrition, biotechnology, microbiology, disease science, and disease control. You'll also learn about the global animal health industry, how animal diseases spread, and risks to other animals and humans.

Knowledge will be shared in the classroom and you will do practicals in our laboratories, farm, and Companion Animal House.

Furthermore, you will gain work experience needed for entry to veterinary medicine programmes. Settings for this might include clinical practice or research facilities such as the Harper Adams Future Farm.

This will enable you to plan to meet the entry requirements of your preferred Veterinary Medicine course, should this be your next step. Or it will increase awareness of other career options. You will reflect on this experience, developing your personal, professional and research skills and undertaking a review project.

A-level entry requirements

- AAB including Chemistry and Biology
- Students should typically be studying **3 subjects at A2 level** to be considered
- Applicants are encouraged to gain experience working with a number of different animals in different settings. Applicants should include details of this in their application. Experience of different animals will enable reflection and will help with many aspects as students' progress through the course.
- **4 GCSEs or equivalent at grade C/4 or above**, including English Language, Maths and a Science
- Key Skills (and other level 2 variants) and First Certificates/Diplomas are not accepted in place of GCSE passes
- Interviews will take place on an ad-hoc basis should the Course Manager wish to discuss any aspect of your application and for all potentially suitable applicants who require visa sponsorship.
- Overseas applicants please check our English Language Requirements

Note: Entry Requirements are for guidance only, please check the UCAS website or contact Admissions for

further information.

The course uses teaching methods including lectures, tutorials, case studies, and practical sessions. Online resources will also support your learning. The course lasts six semesters over two years, including at least five weeks of directed study/independent study within the Christmas, Easter and Summer inter-semester periods of each year of study. For the third and sixth semesters, you'll have a mix of online and on-campus learning, with at least five days of intensive on-campus teaching.

A range of different methods will be used to assess your learning. These will include written coursework, practicals, online tests, laboratory reports and presentations. You will also complete reflective writing and complete research review projects.

There will be assessments from early in the course to help you become familiar with how each type works. You will also be able to see how the assessments are relevant to your studies and future career.

The grounding provided in both science and applied animal studies opens up opportunities in many areas.

It is important to realise that by studying this course you will not qualify as a vet (i.e. you can't diagnose and treat animals)

However, it could provide an opportunity to progress to Veterinary Medicine through the graduate entry route, subject to your performance and to the requirements of any vet school you might apply to.

Further opportunities include working in veterinary pharmaceutical companies that produce animal health products. Or in the animal nutrition or biotechnology industries or in a research capacity.

You would also be well qualified to work as an animal health inspector for a local authority or Defra.

What will I study?

Year 1		Year 2	
Animal Biology (A4001HF)	20	Applied Nutrition (HF)	20
Animal Husbandry and Management (A4002HF)	20	Musculoskeletal Dysfunction	20
Animal Health (A4003HF)	20	Farmed Animal Health and Genetics	20
Evolution, Genetics and Behaviour (A4004HF)	20	Applied Animal Health (HF)	20
Skills for the Animal Scientist (A4006HF)	10	Advances in Animal Diseases and Population Health (HF)	20
Introduction to Animal Welfare and Ethics (A4005HF)	20	Current Trends in Animal Sciences (HF)	20
Professional Development	10	Pain Biology and Management	20
Physiology of Body Systems (HF)	20	Research Skills and Review project	40
Animal Medicines and Preventative Animal Health (HF)	20		
Animal Diseases (HF)	20		

Animal Biology

Year of study 1
Code A4001HF
Credits 20
Core/option Core
Module contact Jane Thomas

Underpinning knowledge and understanding of how the animals are organised, acquire nutrition and energy is an important aspect in studying animal-related courses and this module provides an introduction to the structure and function of animals. Within this module, you will learn the structure and organisation of biomolecules, cells, and tissues in forming complex organ systems in a range of animal groups. You will take a comparative and practical approach for learning, by observing and analysing the detailS relating to animals, within specialist learning environments.

Knowing organisation and unique characteristics of the animals that are around us then helps you to appreciate how they function effectively within their natural environment or production systems, giving you a broader foundation to explore further detail during your degree programme.

Animal Husbandry and Management

Year of study 1
Code A4002HF
Credits 20
Core/option Core
Module contact Jane Thomas

It is important when studying animal-based courses that you have an understanding of animal management practices involved with a variety of systems and settings. This module will place emphasis on environmental requirements, nutritional needs, and species suitability where you will cover livestock, companion animals, exotic, aquaculture and equine species.

This module provides theoretical knowledge and practical animal husbandry opportunities required for safe human and animal interactions. This module provides a strong foundation to prepare you for future course-specific content.

Animal Health

Year of study 1
Code A4003HF
Credits 20
Core/option Core
Module contact Jane Thomas

This module enables you to explore how the body stays healthy in the face of disease challenges and explore causes of disease. The immune system faces challenges from pathogens on a daily basis. You will explore how the body deals with these challenges and what forms they can take. This knowledge is essential for anyone working with animals in order to maintain the health and welfare of animals in their care. Laboratory skills will be developed by working collaboratively, collecting data and interpreting results.

Evolution, Genetics and Behaviour

Year of study 1
Code A4004HF
Credits 20
Core/option Core
Module contact Jane Thomas

This module provides a broad overview of how the process of evolution through Darwinian natural selection has resulted in the diversity of life seen on Earth. The microevolutionary and speciation mechanisms underpinning evolution are explored, including the role of DNA, mechanisms of inheritance, coevolution and symbiosis. The classification of living organisms and the diversity of the animal kingdom are reviewed. The factors that led humans to domesticate plants and animals are considered, including the impacts of domestication on animal behaviour. The module is designed to give you a deeper understanding of evolution and its role in animal behaviour development.

Skills for the Animal Scientist

Year of study 1
Code A4006HF
Credits 10
Core/option Core
Module contact Jane Thomas

Within this module, you will acquire essential academic skills that can be applied to higher education and careers within the animal sciences. The module supports learning across other modules within the degree programme and allows time to develop competency within and beyond technically orientated learning. You will develop an awareness of personal and academic development to facilitate growth and development in the disciplines. You will explore the analysis and presentation of scientific data to support effective communication and collaboration with the scientific community.

Introduction to Animal Welfare and Ethics

Year of study 1
Code A4005HF
Credits 20
Core/option Core
Module contact Jane Thomas

This module provides an introduction to a range of industries which involve animals and the implications of those industries within a variety of settings on a national and an international scale. It will consider the ethics of societies' usage of different types of animals and the role of legislation and different organisations in the promotion of the interests of animals. Examples will be drawn from a range of diverse species and scenarios to illustrate the principles and practices discussed. The main ethical theories that are useful when exploring these issues are discussed and explained. Examples of how these theories can be applied to our interactions with animals are discussed.

During the module you will also be introduced to the concept of animal welfare, legislation within industries and welfare implications for animals. The content of this module will be of benefit to anyone considering working either directly or indirectly with animals in a range of environments. This module will equip you with underpinning knowledge which will support you throughout your degree in second and final year modules and ongoing interactions with animals.

Professional Development

Year of study 1
Credits 10
Core/option Core

In this module you will be supported to identify your career goals. It is focused on your personal and professional development for your chosen career and will include work experience needed for entry into graduate entry veterinary medicine courses or to develop your knowledge of the animal industry to support and define your alternative career ambitions.

You will develop skills to have the confidence to approach organisations and secure work experience.

Physiology of Body Systems

Year of study 1
Code HF
Credits 20
Core/option Core
Module contact Jane Thomas

A broad understanding of how animals maintain their bodily functions helps in understanding the production, behaviour, and health of domestic animals. Building on the knowledge gathered in Animal Biology in level 4, this module allows you to further explore the relationship between structure and function of animal body systems at a cellular, molecular, and metabolic level. Understanding body mechanisms and their contribution in maintaining the internal environment and responding to external stimuli will help you to appreciate how an animal functions as a whole organism at various developmental, physiological and production stages. You will gain knowledge on the principles of biotechnology to allow you to assess how scientific advances influence animal physiology in terms of production, health and breeding.

Animal Medicines and Preventative Animal Health

Year of study 1
Code HF
Credits 20
Core/option Core
Module contact Jane Thomas

This module will build on content covered at Level 4 within Animal Biology and Animal Health, further developing the ability to evaluate animal health and delving deeper into disease prevention. You will be encouraged to develop skills that will enable you to assess and create integrated and preventative health and disease programmes. The use of technologies to facilitate accurate assessments and prophylactic strategies will be explored and evaluated.

Alongside animal health, an introduction to epidemiology will facilitate and complement understanding of disease prevention. Exploration of the pharmaceutical industry on a global scale and its relationships with legislation and policy as well as with animal keepers, will be vital in any future work you become involved in within the animal industry. Furthermore, understanding how to ensure medicines are effective and used responsibly will ensure you are well placed to protect medicine stewardship.

Animal Diseases

Year of study 1
Code HF
Credits 20
Core/option Core
Module contact Jane Thomas

This module focuses on the identification and characteristics of the range of diseases that animals face and how their bodies respond to these challenges. Level 4 modules highlighted a range of infectious diseases which can affect animals, along with the associated clinical signs. In this module, you will continue to explore infectious and non-infectious diseases and discover how these establish within the body and cause disease pathology. You will explore the disease-causing agents and the effect they have on the host and how the body responds. In addition, identification and the pathological presentation within the animal host will be investigated using a variety of laboratory techniques.

Applied Nutrition

Year of study 2
Code HF
Credits 20
Core/option Core
Module contact Jane Thomas

An understanding of factors affecting dietary nutrient supply and animal nutrient requirements is essential for the design of feeding strategies to optimise health, feed utilisation, and animal welfare. In this module, you will examine the chemical components of animal feeds and develop an understanding of how the chemical composition of feeds contributes to the supply in all animal species. It will cover animal nutrient requirements and assessment together with macro and micronutrient supply and metabolism. Evaluation of dietary supply for animals in captivity will be compared to their natural environment. Techniques associated with feed evaluation will also be covered. Supply of nutrients will be calculated along with assessing the impact of over or under supply and its impact on health and welfare. Construction and analysis of nutrition-based trials will be explained.

Musculoskeletal Dysfunction

Year of study 2
Credits 20
Core/option Core

Physical therapy techniques are commonly instigated during the treatment of musculoskeletal and neurological diseases in feline and canine patients. This module will develop your understanding of the underlying pathology of a case, how these affect the structure and movement of animal patients, including process of inflammation and tissue healing in the musculoskeletal system. The module will also cover common conditions affecting rehabilitation, include their cause, the process of infection causing disease and diagnosis.

Farmed Animal Health and Genetics

Year of study 2
Credits 20
Core/option Core

This module is focused on the approaches taken to maintain good health of farmed animals through disease management and high standards of welfare. Throughout this module you will develop understanding and analyse the development of disease in farmed animals and the interactions between host, environment and agents of disease, such as lameness, mastitis, metabolic diseases, and respiratory and digestive diseases. The module also covers reproductive disorders and endemic and exotic infections and reproductive diseases and parasitology.

Applied Animal Health (HF)

Year of study 2
Credits 20
Core/option Core

This module aims to incorporate concepts studied at Levels 4 and 5 with application to real-world case studies. This will include consideration of husbandry and management practices, biosecurity, disease aetiology and their impact on disease susceptibility, animal behaviour, welfare and the potential economic impact that disease and management solutions may have on the business. Independent study will permit students to develop the ability to discriminate, evaluate and analyse information from a variety of sources.

This module will include phenomena-based learning and evaluating solutions in order to communicate this back to industry and research communities.

Advances in Animal Diseases and Population Health

Year of study 2
Code HF
Credits 20
Core/option Core
Module contact Jane Thomas

This module will build on content delivered in Level 4 and 5 on animal diseases. Previous modules have highlighted a range of infectious and non-infectious diseases which can affect animals, along with the associated clinical signs and techniques for identification. This level 6 module aims to develop your knowledge and appreciation of animal health and disease issues on a worldwide scale, which will be informed by cutting-edge research. The fundamental principles of epidemiology will be covered, including their application to real-world disease scenarios and towards the interpretation of published research. You will have opportunities to further develop the understanding of the disease processes and body defence systems relating to disease that are economically and globally important. Furthermore, the field of preventative health has advanced considerably in recent years; this module will examine these advancements and consider further potential developments within these fields.

Current Trends in Animal Sciences

Year of study 2
Code HF
Credits 20
Core/option Core
Module contact Jane Thomas

Scientific advances in animal industries drive improvements in animal health, welfare and management and research is a crucial contributor to advances within animal sciences. This module will provide you with the opportunity to explore recent advances and current trends within the animal science industries relevant to

your course, crucial to ensuring you are up to date with the latest scientific knowledge in the field. It will allow you to develop a deeper understanding of current issues and to develop the ability to source, discriminate, evaluate and interpret information from a variety of sources to ensure you are well-equipped for an evidence-based approach in preparation for entering the graduate sector. You will learn to assess the future potential of research to enhance knowledge and understanding whilst also demonstrating an appreciation for the limits of research to overcome challenges within the industry.

Pain Biology and Management

Year of study 2
Credits 20
Core/option Core

This module will develop a sound understanding of the process of pain development and perception and its critical importance to all working with animals. You will develop an understanding of how pain can be recognised, controlled and managed. This module will also provide an underpinning knowledge of the anatomy and physiology of acute chronic and neuropathic pain development, as well as exploring the biological consequences of untreated pain. Pain management approaches will include both pharmaceutical and non-pharmaceutical across a range of species. You will also learn about the ethics of pain management and owner communication.

Research Skills and Review project

Year of study 2
Credits 40
Core/option Core

This module is in two distinct parts. First you will explore the techniques and challenges of practically undertaking research, looking at different research methods and approaches to analysis. You will develop an understanding of the research process including literature review, setting objectives/hypothesis, data collection, ethics of research and qualitative and quantitative research approaches. In the second part of the module you will undertake your own research work, choosing a topic and investigating it through an in depth review. As you explore the topic you will expand your subject knowledge and critique research related to the field of study.