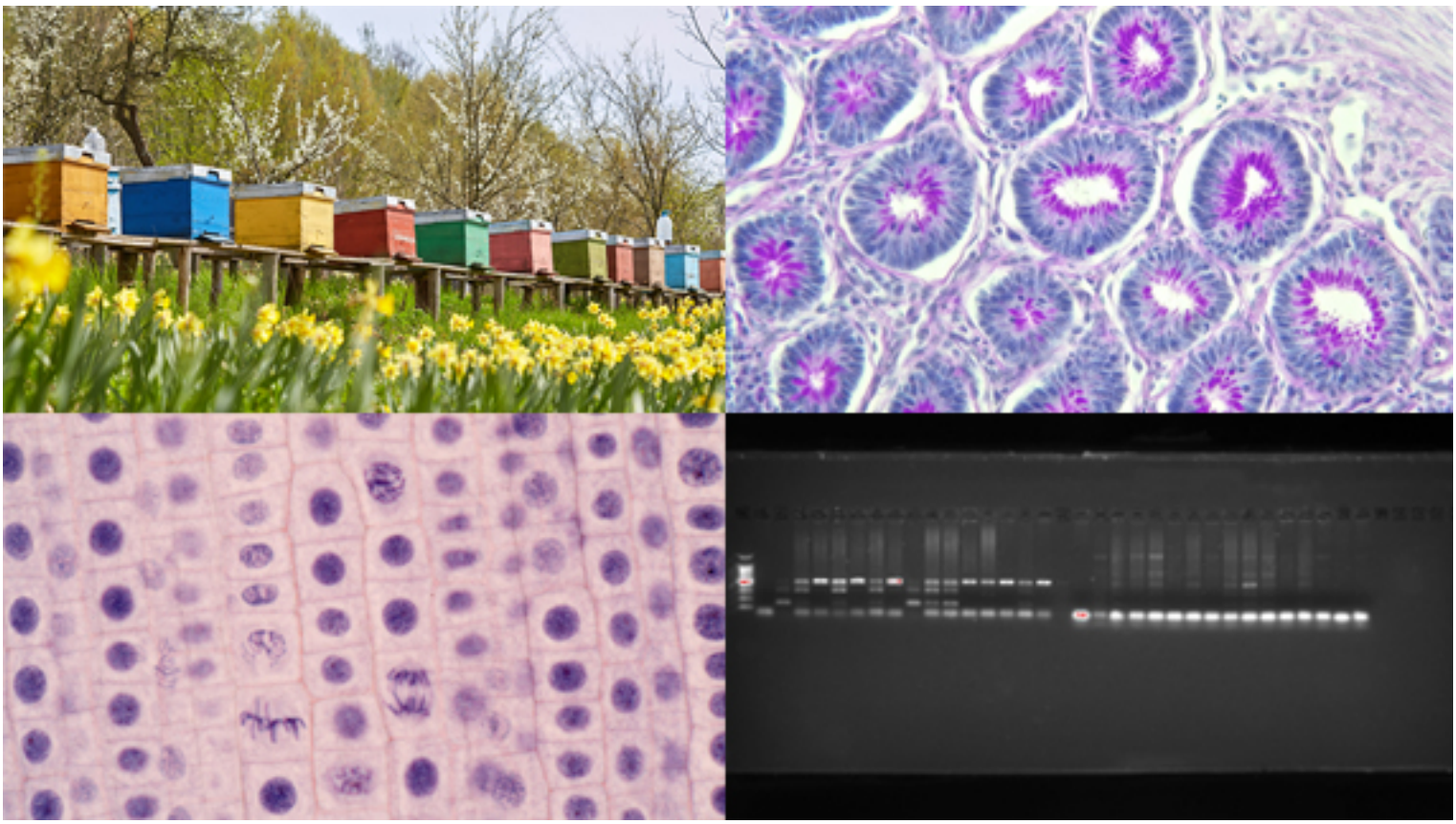

BSc single honours or in combination with another subject

Animal Science

Year of entry 2017/18

WHY ANIMAL SCIENCE?

Recent changes in animal welfare laws in Britain have meant that there is now more control and regulation of all animal-based enterprises. This has resulted in a greater need for a scientific approach to animal management and welfare across all businesses that work with animals. These sectors require well-prepared animal scientists able to apply their knowledge to emerging management issues.

This course seeks to provide you with a stimulating and challenging experience, and is intended for those aspiring to work in animal care, welfare or animal-based industries, from zoos and wildlife

Our learning resources in Animal Science have a 85% rating.

National Student Survey, 2016

parks, to pet shops, veterinary situations, farms and wildlife conservation. Special consideration is given to scientific understanding of animal physiology and welfare.

This programme also provides a vehicle for the development of a set of transferable skills appropriate to a wide range of animal care, welfare and management settings, and for further advanced study.

WHO IS THIS COURSE FOR?

This course is for you if you are passionate about animal welfare and conservation. It will provide an inspiring and demanding experience and is ideal for students who aspire to work in animal care, welfare or animal-based industry. The degree is also suitable for those wishing to work in microbiology and in agriculture. You will gain a broad background knowledge and essential practical skills.

WHAT WILL I STUDY?

During your first year, a set of compulsory modules covers introductory biology, plant taxonomy and environmental science. The course's ethos is to integrate the biological and physical sciences together. There is also an emphasis on experimental science, so you learn a wide range of practical techniques, including microbiology and cell culture.

In year two, modules probe deeper into animal physiology, animal nutrition, developmental biology and animal behaviour. In year three, modules examine the scientific background to animal health and welfare, and animal pathology. You also carry out a practical research project as part of a final year Individual Study.

93% of Animal Science graduates were in employment or further study six months after completing their studies.

DLHE 2013-14

Work experience

You will be able to compete for internships over the summer breaks. These usually involve working with lecturers on their research projects.

"Over the course of my degree, with the help of patient lecturers and kind fellow students I developed the mental and technological tools to necessary to ask questions of the world of animals. I am now a lecturer in one of the most student-centred

Universities I know of. If you want to develop in your own direction, with the full support of active researchers in your field of interest, or if you do not yet know what your field of interest is, then come and see us."

Dr Phil Buckley , Animal Science Lecturer, Canterbury Christ Church University

You can study **French, German, Italian, Mandarin Chinese** and **Spanish** as part of, or alongside, your course.

MORE INFO

MODULE INFORMATION

In line with good practice, module content is regularly updated and module titles may on occasion change to reflect updated content in the advances in the field of study.

Year 1

Animals in the Environment

This module explores the interaction of humans with, the environment and animals. It aims to develop your understanding and appreciation of vertebrate and invertebrate animals and the role they play in selected habitats. It also introduces you to aspects of animal behaviour. The module involves a series of practical sessions and field trips to a series of animal-based enterprises.

Biochemistry

You will be introduced to the basic concepts and chemical foundations of biochemistry and cell biology to develop an understanding of structure and function of animals at the molecular level. You will be introduced to the basics of immunology and endocrinology and undertake a number of practicals based on the theory you have learnt.

Diversity of Life

Life on earth is amazingly diverse, colourful and multifaceted. The diversity of life module introduces you to this variety, tracing the tree of life from its roots to its branches. Beginning with simple, singlecelled organisms like bacteria and protists, you discover the various forms of complex life that have evolved and how to classify them in a taxonomic system using characteristic features of each group. The module features a large number of practical sessions in which you engage with plants, animals and other organisms.

Genetics and Evolution

You will learn about key concepts in genetics and evolutionary biology, providing a broad knowledge of Mendelian genetics and the mechanism of evolution. You will undertake a number of practical in cell biology and DNA methods and utilise bioinformatics to access, evaluate and interpret genetic and phylogenetic data.

Microbiology

This module will introduce you to principal taxonomic groups of microorganisms; examines their growth, physiology and culture, and their importance to humans and the biosphere. The module equips you with the necessary skills to carry out safe, aseptic practices with such organisms in a laboratory environment.

Science Skills and Introduction to Statistics

You will develop the necessary background in science communication, skills and methods essential for a degree in life sciences. You will learn how to analyse quantitative biological data, including statistics and experiment design and how to understand scientific publications and write scientific papers.

Year 2

Animal Anatomy and Physiology

By examining mammalian anatomy and physiology and comparing these systems with those of a range of other animal groups you will develop an integrated understanding of animal form and function. Throughout this module, communication, evolutionary history and homeostatic processes are used as unifying themes. Dysregulation of these systems will also be investigated. A number of practical sessions will be undertaken based on the theory you have learnt in the lectures.

Animal Pests and Diseases

This module aims to teach you about pests, parasites and pathogens which affect animals, and how they affect the wider world. The course begins with introduction to the taxonomy and biology of these organisms, the economic impacts they have on societies around the world, and the ways in which animals have evolved to fight infection and infestation. You will then discuss and comment on the mechanisms by which humans have attempted to control pests, parasites and pathogens such as the use of antibiotics, pesticides, vaccination and biological control.

Data Handling

This module aims to develop the techniques necessary to handle quantitative biological data analysis and introduce the beginnings of bioinformatics. You will be introduced to the powerful statistical programming language, R. This programming language is critical to current approaches to handling/ analysing data, particularly “big data”.

Genetics of Animal Breeding

This module will provide you with an understanding of strategies employed for the genetic improvement of both livestock species and other domesticated animals, taking into consideration the associated ethical implications. You will develop a further understanding of key genetic principles and there will be a particular emphasis on the various applications of modern genetic techniques such as genome wide association studies, cloning and transgenics.

Molecular Biology and Biotechnology

This module offers you a unique practical experience of diverse laboratory skills associated with the isolation, handling and manipulation of DNA and proteins. You will cover the main areas of theoretical molecular biology knowledge and its practical applications in current research.

Optional modules

Options are subject to availability and may change. The work placement module is offered based on suitable work placement being available and the student being accepted by the employer offering the placement.

Animal Behavioural Ecology

This module aims to introduce you to the ecological side of animal behaviour. You will learn about the main influences on behaviour and how these can influence animal behaviour at an individual, group and species level. After undertaking this module, you will be able to design and carry out animal behavioural studies in an ecological context.

Natural Product Chemistry

The aim of the module is to provide students with an understanding of the chemistry of natural products, building on the chemical knowledge acquired in level 4 modules. It aims to introduce students to the chemistry of natural products and the links between molecular structure and properties, establishing connections with the behaviour of these compounds in biological systems. It also introduces purification methods and different analytical methods that can be used in the isolation and identification of these compounds, and to encourage a critical approach to these methods.

Work Placement

This module gives you the opportunity to undertake a summer placement in a commercial environment to develop key skills and work experience. By the end of this module, you will be able to critically reflect and review your own competencies and development requirements.

Year 3

Animal Health and Husbandry

The aims of the module are to explore the importance of animals in society and the scientific background to animal welfare issues. This includes the study and analysis of nutrition, good husbandry, disease control, pain perception, the ability of animals to cope with their environments and the physiological and behavioural aspects of welfare.

Animal Reproduction and Development

This module examines the genetic and endocrine control of reproductive behaviour and other aspects of reproduction, of embryological growth and subsequent ontogeny of selected vertebrates and invertebrates. This allows you to develop an understanding of how the processes underpinning animal reproduction and development function and have evolved.

Bioinformatics 1

This module aims to develop a systematic understanding of the role of computing in biological research, the fundamentals of molecular biology and to introduce the key concepts and techniques in bioinformatics. A major focus will be computer practicals to re-enforce the theory within the interactive lectures.

Honours project

This module provides you with autonomy in your learning as you pursue in depth the study of a topic of your own choice within animal science. In doing so, you will gain practice at organising your thinking in a scientific context and will increase your confidence in dealing with scientific problems and issues. With a broad scope, this module allows you to work with external businesses and partners and to potentially produce work that can be either published as a peer reviewed article or that may be of real world value to a partner organisation.

Optional modules

Options are subject to availability and may change

Cancer Biology and Immunology

In this module, you will obtain a comprehensive understanding of the biology and genetics of cancer and the role of the immune system in tumour development in humans and other animals. It will introduce a range of medical techniques used to diagnosis cancer and you will study the latest cutting-edge treatments and the molecular mechanism used by those treatments. You will participle in discussions on the impact cancer has on people's lives and how patients are cared for including end of life care.

Bioinformatics 2

This module provides a more in depth investigation of the techniques and analyses introduced in Bioinformatics 1 focusing on building the programming and computational skills to allow you to design and undertake complex analyses. You will build an understanding and ability to use various industry standard tools. A major focus will be computer practicals to re-enforce the theory learnt.

Current Science Issues

In this module, you will develop a wider understanding of how science influences and affects society. You will develop your independent research and analysis skills as you comment on important science issues. The weekly section research / visiting speaker lecture will be used as a base to discuss topics.

WHAT CAN I DO NEXT?

This course provides opportunities for careers in key positions in a range of animal-based fields, including zoos, the pet trade, stables or kennels, veterinary practice management, wildlife conservation management and the pharmaceutical industry. Some graduates have become teachers and others have gone on to postgraduate study.

Transferable skills developed by this course are valuable in other non-scientific areas of industry, commerce and the media. These include time management, statistical and planning skills, communication and presentation skills, and an ability to think critically.

Scientific training is a key skill in the economy, but such personnel are in short supply. Graduate employment is generally becoming harder to find but science graduates find themselves at a distinct advantage in the job market. Most of our animal science graduates find employment in the sciences.

FEES AND ADDITIONAL COSTS

Fees

The 2017/18 annual tuition fees for this course are:

	UK/EU	Overseas
Full-time	£9,250*	£11,000**
Part-time	£4,625	N/A

Tuition fees for all courses are payable on an annual basis, except where stated.

*Full-time courses which have a Foundation Year 0 will have a 2017/18 UK/EU tuition fee of £6,165 in Year 0.

**Tuition Fee Scholarship discounts of £1,500 are available to eligible overseas students. Visit the International webpages for further information.

Please read the 2017/18 Tuition Fee Statement for further information regarding 2017/18 tuition fees and year on year fee increases

Further information

- Read further advice about funding your degree
- See information about the financial support available for undergraduate studies
- If you would like information about paying your fees, please contact finance@canterbury.ac.uk
- For specific fee queries, please contact fees@canterbury.ac.uk

Additional course costs

Although we aim to minimise any additional costs to students over and above the course tuition fee, there will be some additional costs which students are expected to meet.

Costs applicable to all students

Category	Description
Text books	Own purchase text books

Category	Description
Travel to other sites	Where travel to other sites is required, this will be payable by the student
Library Fees and Fines	Where students fail to return loaned items within the required time they will be responsible for the cost of any Library Fees and Fines applicable
Printing & Photocopying	The cost of printing and photocopying undertaken by students to support their individual learning are payable by the student
Graduation ceremonies	It is free for the student to attend the ceremony itself. Guest tickets and robe hire / photography are additional costs payable by the student

General principle policy

The University's general principles policy for additional course fees are set out here

Category	Included in the tuition fee	Additional cost to student
Field trips (including trips abroad and trips to museums, theatres, workshops etc)	Yes, if the trip contributes to the course (whether it is part of an optional or compulsory module), but not including food and drink.	Yes, if the trip is not an essential part of the course but is offered as an enhancement or enrichment activity, or for a student's personal development.
Travel and accommodation costs for placements	No	Travel and accommodation costs for professional placements within the Education and Health & Wellbeing Faculties. Travel and accommodation costs for other work placements.
Text books	No	Own purchase text books.
DBS / Health checks	No	Yes
Professional Body registration	No	Yes
Travel to other sites (e.g. travel to swimming pool for lessons)	No	Yes
Clothing / Kit	Yes, where the clothing / kit is essential for Health & Safety reasons.	Yes, where the clothing is kept by the student and not essential for health and safety reasons.

Category	Included in the tuition fee	Additional cost to student
Learning materials	Essential learning materials (excluding text books) in connection with the course.	Additional materials beyond the standard provision essential for the course or where the costs are determined by the student's area of interest and the outputs are retained by the student.
Library fees and fines	No	Yes
Printing and photocopying	No	Yes
Social events	No, unless the event forms an essential part of the course.	Yes, unless the event forms an essential part of the course.
Graduation ceremonies	It is free for the student to attend the ceremony itself.	Guest tickets and robe hire/ photography are additional costs payable by the student.

LEARNING AND TEACHING

Each taught module has a standard 60 hours of student contact. This will typically be composed of lectures, seminars, practical work, labs, workshops, field based activity, tutorials, feedback on assignments. You will also be expected to engage in 140 hours of self-directed study per taught module.

Our academic support in Animal Science has a 91% rating.

National Student Survey, 2015

Academic input

All of the modules you will study are led by experienced academic staff and all lectures are delivered by staff with PhDs and who have, or are studying for, a higher education teaching qualification or membership of the Higher Education Academy.

Within this framework, modules may feature guest lectures by subject specialists undertaking research on a specific topic, or from those working in that particular field. The lecturing staff includes those specialists in many areas of biology, and also chemistry and physics.

ASSESSMENT

Assessment of the modules is varied. Some modules are assessed entirely by coursework and some by a combination of coursework and examination. Coursework may include essays, calculation and problem solving exercises, practical write ups, portfolios, log books, group and or individual work, group projects, oral presentations, assessed practical, laboratory work, graph drawing exercises, (group) poster presentation, computer based assessment, group presentation, data handling exercises, multiple choice questionnaire, seminar presentation, paper presentation, seminar papers, case study (involving the analysis of biological data) audio or video presentation.

SPECIALIST FACILITIES

Opportunities to work at industry-quality research facilities.

INDUSTRY LINKS

October 2015 saw the launch of the Life Sciences Industry Liaison Laboratory at Discovery Park. Discovery Park, the enterprise zone based at Sandwich, is a fabulous site with well over 100 companies now based there.

The potential of the Liaison Laboratory lies in the work we and our students will do with the businesses based at Discovery Park. The Lab will allow all of our students to have the chance to experience an industry environment and will, for those seeking to work in the field, allow them to do research or study in that environment for a substantial period. This represents a major change in the scale of student opportunity and there are exciting times ahead.

ADDITIONAL FOUNDATION YEAR

BSc Hons Animal Science with Science Foundation Year

This course can also be studied over four years with an additional foundation year (Year 0) for those without the formal entry qualifications. The foundation year is designed to provide you with the grounding you need to progress on to the degree.

Find out more.

APPLY NOW

UK/EU

Full-time study

APPLY VIA UCAS

Part-time study

APPLY DIRECTLY TO US

International

Full-time study

- Apply via UCAS
- Apply directly to us (pdf)
- Find a representative in your country

Need some help?

UK

For advice on completing your application please contact the **Admissions Enquiry Team**:

Email: admissions@canterbury.ac.uk

Tel:+44 (0)1227 782900

EU/International

Contact our International Team

FACT FILE

UCAS code

C300 Animal Science

C301 Animal Science with Foundation Year

Institutional code

C10

Length

3 years full-time

4 years full-time including a Foundation Year

6 years part-time

Starts

September 2017

Entry requirements

A typical offer would be 96 UCAS Tariff points. An A-level at Grade C (or equivalent) in a science subject is required, preferably biology.

This course can also be studied over four years with an additional foundation year (Year 0)

More entry requirement details.

Location

Canterbury

School

Human and Life Sciences

Our Staff

More about

BSc Animal Science 17/18 - Canterbury Christ Church University

Call our Clearing Hotline
+44 (0)1227 926000

University Switchboard:
+44 (0)1227 767700

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