

Zoology

 BSc (Hons)

COURSE DETAILS

- A level requirements: [ABB](#)
- UCAS code: C300
- Study mode: Full-time
- Length: 3 years

KEY DATES

- Apply by: [25 January 2023](#)
- Starts: 25 September 2023

Course overview

A Zoology BSc (Hons) can provide you with the knowledge and training not only for a job working as a zoologist but also equips you for a career in the environmental, agricultural and pharmaceutical industries.

INTRODUCTION

You'll study a broad range of modules including animal behaviour, conservation biology, ecology and animal physiology with the opportunity to specialise and carry out your own research project.

We also offer support for making career choices right from the beginning. In your first year you will have the opportunity to consider potential career pathways within and outside the field of zoology.

You'll learn and develop those important transferable skills in communication, team working, project management and computing with practical sessions and group work. You will also have the opportunity to begin developing your specialist portfolio. You have the option to enroll on one of our deferred choice programmes (C130 or C100) before you specialise.

WHAT YOU'LL LEARN

- Fieldwork at zoologically rich locations in a wide range of habitats
- Residential field courses at the Lake District or South of France
- Opportunities to take a tropical field course in Uganda
- Animal husbandry
- Advanced techniques in Zoology
- Marine ecosystems, animal behaviour and diversity, ecology and the global environment

Course content

Discover what you'll learn, what you'll study, and how you'll be taught and assessed.

YEAR ONE

In this first year, you'll gain an understanding of the structure and function of the animal plan, its evolutionary origins and adaptation to different habitats, learn about ecology and the global environment and discover how to utilise quantitative

skills and study techniques, and also participate in field studies as well as choose optional modules in subjects such as marine ecosystems, genetics and animal husbandry.

COMPULSORY MODULES

ANIMAL BIODIVERSITY (LIFE112)

Credits: 15 / Semester: semester 2

This module studies the body plans of the major groups of animals and explores the relationship between body form and function.

It also discusses the evolutionary origins of these basic body plans and how these have been modified to adapt to particular habitats.

The module will be taught through a mixture of asynchronous and synchronous material. The former consists of pre-recorded videos and other online learning material, the latter consists of scheduled interactive online sessions. Students will also be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.

The module will be assessed through continuous assessment.

BIOLOGY & ECOLOGY FIELD SKILLS (LIFE124)

Credits: 7.5 / Semester: semester 2

This five-day course takes place in the early summer in a biologically rich, beautiful location in the UK, typically the Lake District or the Yorkshire Dales. Students gain an introduction to the skills biologists use to study individuals, populations, species and ecosystems in the field.

Students spend a day learning some of the basic skills biologists use to observe animal behaviour in the natural environment, focusing on birds and insects.

They then learn techniques used to monitor the number of animals in wild populations, given that in the field observing an entire population is typically impossible. They live-trap and release both small mammals and invertebrates, and trap moths.

Next, they spend a day examining the interactions between species, focusing on how the different characteristics of species determine how they compete and coexist with one another, and how seemingly minor microhabitat differences can radically alter community structure and the species that persist in an area. This day introduces plant taxonomy and diversity.

Finally, they learn techniques for investigating ecosystems at the largest scale, tracking how nutrients cycle through the plants and animals in a habitat, and the water and soil. They study how this flow of nutrients can alter an ecosystem, and impact on the survival of the species and individuals within it.

More broadly, students learn the basics of taxonomy, and an appreciation for the phenomenal diversity of organisms that can be found across the UK. Importantly, they are also taught to think critically about the methods they are using, gaining experience in experimental design, and a greater understanding of the challenges inherent to taking biology out of the laboratory and into the field.

ECOLOGY AND THE GLOBAL ENVIRONMENT (LIFE120)

Credits: 15 / Semester: semester 2

This module will introduce students to the physical and chemical contexts of the biosphere, the cycling of important elements at different scales, the distribution of biomes and the ecosystem concept.

Ecological concepts such as succession, niche, food web theory and ecosystem stability will be introduced, and how these are impacted by human activities.

The module will also consider the conservation of biodiversity over a range of biological scales using UK and global case studies. The lectures will be supplemented with on-line resources.

Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.

The module will be assessed by coursework, including online test.

EVOLUTION (LIFE103)

Credits: 15 / Semester: semester 1

This module describes the evolutionary processes that have resulted in the generation of the diverse life forms that populate the planet.

This includes the theory of evolution by natural selection, and the genetic processes that result in gene evolution and diversity.

Selected scenarios and case studies will apply evolutionary concepts, showing the fundamental importance of evolution to a broad range of the life sciences.

The module is split into two parts: the first part (A) is the same for all students, the second part (B) contains a number of parallel strands tailored to students interest.

Students will be advised by their programme director which strand to follow.

The lectures will be supplemented with a variety of on-line resources.

Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.

The module will be assessed by continuous assessments.

EXPERIMENTAL SKILLS IN CURRENT BIOLOGY (LIFE107)

Credits: 15 / Semester: whole session

This is the first practical module that students will take in the School of Life Sciences. The skills that students acquire will be needed for other practical modules that they will take in semester 2 Year 1, and during Year 2 and will prepare them for their year 3 research project and for their subsequent career.

This module is designed to teach the basic multidisciplinary skills required in the biological sciences.

It aims to develop careful working practices, experimental design and interpretation of results. Skills acquired in this module will be both utilised and enhanced by the co-requisite module LIFE 109 (communication and study skills and quantitative skills).

The way in which LIFE 107 is taught and assessed is designed to place emphasis on encouraging students to take responsibility for their own learning. Demonstrators and academic staff will be on hand to answer questions or show students how to use lab equipment.

Resources will be available online via VITAL and include a weekly Blog, technical manual, module handbook, lab instruction manual and weekly lectures.

The module will be taught in weekly practical classes and it will be assessed through continuous assessment (assessment 1-2) and a final exam (assessment 3).

GRAND CHALLENGES IN BIOLOGY (LIFE105)

Credits: 7.5 / Semester: semester 1

This module introduces students to how grand challenges (scientific and societal) are addressed in universities and in particular at the University of Liverpool. Students will be introduced to four major topics (Infections and Global Health, Ageing, Food Security, Personalised Medicines) by experts in the respective fields. Emphasis will be placed on students understanding concepts and assembling information rather than memorizing facts. The material will be delivered based on the concept of a scientific conference with plenary talks and parallel sessions presented by the lecturers, and (in light of Covid-19 driven procedures at scientific meetings) a video session driven by student input. Assessment of lecture material and associated readings will be by continuous assessment.

MOLECULES AND CELLS (LIFE101)

Credits: 15 / Semester: semester 1

This module describes the detailed composition of cells and the processes by which they obtain and generate energy, grow, replicate and eventually die. The lectures will be supplemented with on-line resources and illustrated with some of the latest research methods that are used to study cell structure and function. Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module. The module will be assessed by both continuous assessments and by a final examination.

QUANTITATIVE SKILLS FOR THE LIFE SCIENCES (LIFE113)

Credits: 7.5 / Semester: semester 1

For any student studying the Biological Sciences a firm grasp of quantitative skills is an absolute necessity. This module will provide you with the knowledge and skills you need to manipulate numbers and analysis/visualise data using digital tools. The module emphasises a "learn by doing" approach to the development of quantitative skills and is heavily workshop based.

COMMUNICATION AND STUDY SKILLS FOR THE LIFE SCIENCES (LIFE130)

Credits: 7.5 / Semester: whole session

OPTIONAL MODULES

INTRODUCTION TO ANIMAL HUSBANDRY (LIFE118)

Credits: 15 / Semester: semester 2

This module provides an introduction to veterinary animal husbandry in the form of lectures, a workshop on poster presentation and a mini conference where students exhibit their posters.

The module covers the basic physiology relevant to animal management; environmental considerations, nutrition and housing; the welfare of managed animals and breeding issues.

The module is assessed by continuous assessment, the poster, and by a final examination.

MARINE ECOSYSTEMS: DIVERSITY, PROCESSES AND THREATS (ENVS122)

Credits: 15 / Semester: semester 2

This module introduces the range of diversity of marine ecosystems using example environments from around the world. Each week a new ecosystem will be covered, with the main organisms, key processes and human threats to the ecosystem described and explored. Central to this module are interactive discussion sessions that will build an understanding of how marine ecosystems are expected to respond to the human-induced changes of the anthropocene.

INTRODUCTION TO GENETICS AND DEVELOPMENT (LIFE128)

Credits: 15 / Semester: semester 2

This module introduces students to modern genetics and developmental biology at an introductory level. Using examples taken from across the biosciences and medicine, students will develop their understanding of the inheritance of genetic traits, how mutation can lead to disease and the molecular techniques used to study genes. They will also be introduced to development from meiosis and germ cell formation through to organogenesis, emphasising both the underlying genetic and molecular mechanisms involved and the embryological processes. Students will explore current advances in both fields including current and potential use of gene editing techniques and stem cells in therapeutics, and will consider the ethical implications of these advances.

The module is taught through a combination of lectures and workshops incorporating problem solving and discussion, with an emphasis on an appreciation of the techniques and experimental evidence underpinning the material. Assessment is by a combination of a written examination and a group ethics poster presentation.

Programme details and modules listed are illustrative only and subject to change.

YEAR TWO

In your second year you'll expand your range of knowledge building those essential research skills, experimental design and analysis together with more advanced animal behavioural, evolutionary biology and ecology studies. At the same

time there'll be student-centred activities in addition to lectures, lab practicals, dissection classes and fieldwork and a chance to study a range of optional modules.

COMPULSORY MODULES

ADVANCED EXPERIMENTAL DESIGN AND ANALYSIS (LIFE238)

Credits: 7.5 / Semester: semester 2

This module extends and puts into practice the knowledge and understanding students gained from LIFE223. In a series of interactive seminars and practicals, students will design and perform their own experiments, choose and perform the appropriate data analysis, and write up the results in a report.

ADVANCED TECHNIQUES IN ZOOLOGY (LIFE230)

Credits: 7.5 / Semester: semester 2

This module aims to provide practical experience in advanced laboratory techniques in zoology. These techniques are placed within a biological context so that students will not only learn the techniques, but also use them to answer questions about form and function of animals. The module is laboratory-based and students will work in small groups to conduct experiments and generate data that will be analysed using Excel and Minitab, SPSS or similar software. The module is assessed continuously and through an exam.

ANIMAL BEHAVIOUR (LIFE211)

Credits: 15 / Semester: semester 1

This module provides an introduction to the fundamental evolutionary principles that explain a wide range of animal behaviours. These include sexual selection and animal mating behaviours, the evolution of co-operative societies, as well as conflict and conflict resolution. The lectures will be supplemented with on-line resources. Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module. The module will be assessed by both continuous assessments and by a final examination.

BIODIVERSITY PRACTICAL SKILLS (LIFE233)**Credits: 7.5 / Semester: semester 1**

This practical module aims to provide practical experience in many of the techniques and methods currently used to identify and classify plants and animals. This will include microscopic and macroscopic examination of specimens, recognition of the role of museum collections in research, and electronic methods of data analysis and storage. Teaching activities include a combination of field work at Ness Gardens and the World Museum, laboratory sessions, and introductory lectures. The module is continuously assessed with workbooks completed in the practical classes, and a final report which draws on several of the practical classes.

COMPARATIVE ANIMAL PHYSIOLOGY (LIFE212)**Credits: 15 / Semester: semester 2**

This module describes the physiological problems encountered by animals in their natural environments, and how these problems are overcome.

The setting is environmental, relating lifestyle and physiology to habitat and to the rigours of a potentially hostile environment.

The module will explain how the lifestyles of animals and the independence of animals from environmental disturbance are critically linked to the management of energy flow through their bodies. Physiological mechanisms will be described at all levels of organisation in relation to energetics, temperature, respiration, osmoregulation, and nitrogen excretion. Emphasis will be placed on differentiating the molecular, cellular and system levels of organisation and their integrated role in optimising animal-environmental interactions.

The module is taught through a mixture of asynchronous and synchronous sessions. The former consist of pre-recorded videos, the latter are interactive online sessions to promote student engagement and active learning. Students will also be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.

The module will be assessed by Coursework

ESSENTIAL SKILLS FOR THE LIFE SCIENCES 2 (LIFE223)**Credits: 15 / Semester: whole session**

This module will continue, extend, and broaden the transferable skills developed in Year 1. It will focus on improving the students' analytical, communication, quantitative, and employability skills. The communication skills component is assessed through a portfolio whereas the quantitative skills component is assessed through a group poster and SAQ.

EVOLUTIONARY BIOLOGY (LIFE213)

Credits: 15 / Semester: semester 1

This module seeks to explain how the process of natural selection underpins the origins of biodiversity.

The first part of the module will address the origins of phenotypic diversity, focussing on where heritable phenotypic variation comes from and how it shapes the evolutionary process within species (microevolution).

Having established a basic model for understanding how evolution works, the second part of the module will explain the link between microevolution and evolution above the species level (macroevolution), overviewing the major evolutionary transitions. At the end of the module, students will choose between two specialised short courses on either evolutionary ecology or molecular evolution.

The lectures will be supplemented with online resources. Students will be given guided reading, and regular formative assessment exercises that will enable students to evaluate their understanding of the module.

The module will be assessed by both continuous assessments (40%) and by a final examination (60%).

POPULATION AND COMMUNITY ECOLOGY (LIFE214)

Credits: 15 / Semester: semester 2

This module aims to introduce students to the concepts and principles underlying the dynamic interactions within populations and between species within communities. It will draw upon examples taken from across the globe: pressures on fish stocks; use of natural predators for biological control processes; how mutualistic interactions benefit communities, such as coral reefs and leguminous plants. It will also explore how knowledge and understanding of these species and community interactions can help plan for ecological mitigation and restoration. The lectures will be supplemented with on-line resources. Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module. The module will be assessed by coursework.

OPTIONAL MODULES

ADVANCED ANIMAL HUSBANDRY (LIFE217)

Credits: 15 / Semester: semester 1

This module is designed to integrate and extend student's knowledge of nutrition, reproduction, genetics and breeding, behaviour and welfare and to combine this with an assessment of the environment in which animals are kept. A species approach is used in which feeding, housing, breeding and general management of several major species important in the animal industries are considered. Transfer of knowledge about principles will be expected between species to help develop a deep understanding of animal husbandry.

The module will be supplemented with on-line resources. Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.

The module will be assessed by both continuous assessments and by a final examination.

ADVANCED GENETICS TECHNIQUES (LIFE226)

Credits: 7.5 / Semester: semester 2

This practical module aims to provide practical experience in a range of genetic techniques including the production and characterisation of specific deletion mutants, mutagen screening, cytogenetics and karyotype analysis, population studies, molecular analysis of genomes and bioinformatics. This module is required for students intending to enter the Genetics Honours School. The module is continuously assessed.

E-BIOLOGY: INFORMATICS FOR LIFE SCIENCES (LIFE225)

Credits: 7.5 / Semester: semester 1

Many aspects of modern biology are being revolutionized by high-throughput methods that make copious amounts of data available in digital form. The aim of this module is to provide students with a practical appreciation of the nature and significance of this revolution. While the focus will be on analysis of data from areas such as genome sequencing, gene expression, and protein structure studies, the module will also look at use of such data in the context of understanding higher order phenomena within cells, such as metabolism, gene regulation, and protein-protein interaction. The module is continuously assessed.

E-BIOLOGY: INFORMATICS FOR LIFE SCIENCES (S2) (LIFE242)

Credits: 7.5 / Semester: semester 2

Many aspects of modern biology are being revolutionized by high-throughput methods that make copious amounts of data available in digital form. The aim of this module is to provide students with a practical appreciation of the nature and significance of this revolution. While the focus will be on analysis of data from areas such as genome sequencing, gene expression, and protein structure studies, the module will also look at use of such data in the context of understanding higher order phenomena within cells, such as metabolism, gene regulation, and protein-protein interaction. The module is continuously assessed.

ENDOCRINE AND NEURO-PHYSIOLOGY (LIFE204)

Credits: 15 / Semester: semester 2

This module aims to provide the essential background knowledge to understand key concepts in neuroscience. It covers the principles of operation of nervous system, systematic and sensory neurophysiology, excitotoxicity and behaviour. The module also provides essential background knowledge to understand the key principles of endocrinology, and how it contributes to physiological homeostasis. It covers the secretions, functions and regulation of the major endocrine glands. The module also explores the role of the nervous and endocrine systems in the integrative control of the digestive tract. The lectures will be supplemented with on-line resources. Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module. The module will be assessed by both continuous assessments and by a final examination.

MOLECULAR AND MEDICAL GENETICS (LIFE208)

Credits: 15 / Semester: semester 2

This module aims to introduce students with an interest in Genetics and Molecular Biology to the range of biological mechanisms that control structure and stability of the genetic material and their impact on health and disease.

It uses examples from both prokaryotic and eukaryotic organisms, to develop principles that explain DNA replication, repair and recombination. These principles and processes are then discussed in a clinical/medical genetics context.

The lectures will be supplemented with on-line resources. Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.

The module will be assessed by both continuous assessments and by a final examination.

TECHNIQUES IN CELL BIOLOGY (LIFE227)

Credits: 7.5 / Semester: semester 1

This practical module aims to provide practical and theoretical experience in techniques currently used in cell biology. These techniques include assay, culture, histology and microscopy. The module is assessed through coursework and a final exam.

THE IMMUNE SYSTEM IN HEALTH AND DISEASE (LIFE221)

Credits: 15 / Semester: semester 1

The module will develop knowledge and understanding of the immune system, the molecules, cells and tissues that are involved in its function, its role in combating infection and how its dysfunction can contribute to disease.

Lectures will be supplemented with on-line resources. Problem solving workshops dedicated to case studies will be held to help students prepare for the assessments. Students will be given guided reading, and formative and summative assessment exercises held during the course will enable students to monitor and evaluate their progress and to prepare for the final assessment.

The module will be assessed by two assessments.

THE MULTICELLULAR ORGANISM: TISSUES, DEVELOPMENT, REGENERATION AND AGING (LIFE205)

Credits: 15 / Semester: semester 1

This module aims to describe the structure and function of fundamental tissues, such as epithelial and connective tissue and of specialised tissues such as bone, muscle and the nervous system. An introduction to the mechanisms by which cells differentiate to form different tissues and regenerate following injury will be included. The processes that occur during aging will be explained with special reference to changes in key tissues and organs. The lectures will be supplemented with on-line resources, guided reading and formative assessment exercises that will enable students to evaluate their understanding of the module. The module will be assessed by both continuous assessment and by a final examination.

TROPICAL ECOLOGY FIELD COURSE (LIFE222)

Credits: 15 / Semester: semester 2

This is an elective residential field course in Uganda. The aim of this module is to introduce students to the ecology of tropical ecosystems and the field techniques used to study them, through staff-led field visits, seminars and student executed field studies.

The module includes tropical ecosystem function, patterns of forest regeneration, patterns of biodiversity in the tropics, the natural history of important plant and animal taxa and primate behavioural ecology. Interactions between humans and tropical ecosystems will also be a key focus, with conservation, sustainable development, human-wildlife conflict and ecotourism also being addressed.

The module will be assessed by continuous assessments. In the event of unforeseen circumstances that prevent either individual students attending, eg illness shortly before departure, or cancellation of the trip, eg on FCO and/or University insurer advice, local alternate assessment exercises will be made available. These will predominantly be library-based, but might involve field visits where possible to practice field skills.

VETERINARY FORM AND FUNCTION (LIFE215)

Credits: 15 / Semester: semester 1

This module will allow students to develop an understanding of functional anatomy and physiology of the major body systems (reproductive/endocrine, cardiovascular/respiratory, musculoskeletal, nervous, and digestive/excretory) using the dog as a model species;

The module will take an integrative approach, allowing the students to compare and contrast the anatomy and physiology of these body systems with those in other species of veterinary interest and apply this knowledge to understand how disruption of these systems can result in disease;

The module will be supplemented with on-line resources;

Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module;

The module will be assessed by two summative coursework assessments.

VETERINARY PARASITOLOGY AND PUBLIC HEALTH (LIFE216)

Credits: 15 / Semester: semester 2

The aim of this module is to develop knowledge of the important parasitic diseases of companion and food producing animals in the U.K. and globally, leading also to an understanding of the importance of these diseases to human and animal public health. The lectures will be supplemented with on-line resources.

Students will be given guided reading, and regular formative assessment exercises will enable students to evaluate their understanding of the module.

The module will be assessed by two items of continuous assessment and by a final examination.

BIRD ECOLOGY, IDENTIFICATION AND CONSERVATION (LIFE243)

Credits: 7.5 / Semester: semester 1

This module considers the ecology, identification and conservation of birds. It seeks to provide an evidence based understanding of bird conservation through studying bird ecology. Key to this is the ability to identify species and assess how key ecological concepts apply to this group. This course will teach students to integrate avian ecology with population and habitat management practices. It will illustrate the links between management and avian biology, habitat fragmentation, migration, and other ecological concepts. Throughout the module, emphasis is placed on the role of research methods in ornithology and how data gained are used to achieve maximally effective conservation and management. The module is aimed at students studying C100 Biological Science and C300 Zoology. The module will be of interest to students wishing to learn more about birds, including those who wish to pursue a career in ornithology or applied ecology.

Programme details and modules listed are illustrative only and subject to change.

YEAR THREE

Year three will provide an unparalleled opportunity for you to learn at the cutting edge of zoological research and be taught by world-leading academics in subjects such as genomics, development and evolutionary anthropology and conservation biology together with

advanced field course work. Central to this year is the research project where you will plan and execute your own research, analyse and critically evaluate data and communicate your research findings in your chosen specialisation.

COMPULSORY MODULES

ADVANCED SKILLS IN ZOOLOGY (LIFE331)

Credits: 15 / Semester: semester 1

This module aims to provide a set of communication and critical reflection skills in the context of zoology. These skills will help students enhance the execution and presentation of their research project, prepare them for Level 6 assessments and maximise their employment and personal development opportunities. The module is taught through seminars and tutorials, but has a strong emphasis on independent learning. Learning material is provided through VITAL. The module is assessed by continuous assessment.

RESEARCH PROJECT (LIFE363)

Credits: 30 / Semester: whole session

This module provides students with experience in the planning, design, and execution of a research project in the area of their programme discipline. The project will encompass a range of approaches including laboratory work, fieldwork, outreach work and data, and / or literature analysis depending on the nature of the project. Students will write an evaluative report on a relevant scientific area and work in collaboration with an academic supervisor to develop, plan, carry out, and record research work. The supervisor will hold regular discussion meetings with the student, and both will contribute to a reflective record of progress. Students will be expected to communicate their findings orally and in a variety of written formats.

ZOOLOGY FIELD COURSE (LIFE333)

Credits: 15 / Semester: semester 1

This module is a residential field course that usually takes place in late August/early September, prior to the start of Level 6. It lasts for ten days and students learn a variety of field skills, including observational study of animal behaviour, field ecology, and experimental design through a mixture of formal lectures, tutorial discussion groups, staff-led field visits and student-executed research projects in the field. The field course also provides in-situ and ex-situ examples of conservation projects and gives students the opportunity to observe zoologists in the workplace. It is assessed by continuous assessments. All scheduled activities take place during the residential field course, but optional tutorials to help with the analysis as well as feedback tutorials are offered on campus at the beginning of term.

OPTIONAL MODULES

ADVANCED TOPICS IN ECOLOGY (LIFE337)

Credits: 15 / Semester: semester 1

This module will examine a range of topics in contemporary ecology.

It will follow on from material covered at a more general level in associated modules in levels 4 and 5.

Four main topics will be explored: population ecology, macro ecology, disease ecology, and community ecology.

The module will be assessed by continuous assessment.

CONSERVATION BIOLOGY (LIFE326)

Credits: 15 / Semester: semester 1

This module uses research-led teaching to explore current thinking in conservation biology; The module explores patterns of biodiversity and encourages students to critically evaluate the evidence supporting alternative explanations for the extinctions or demise of many animal and plant species;

It also enables students to critically evaluate different approaches to conserving biodiversity;

The module is taught via lectures and student led seminars, in the form of debates. To support independent learning, students will also be guided to sections of specific textbooks and expected to follow up references, primary and secondary sources, listed by staff.

CURRENT SKILLS AND TOPICS IN EVOLUTIONARY BIOLOGY (LIFE324)

Credits: 15 / Semester: semester 2

This module uses research-led teaching to critically examine a selection of contemporary themes in evolutionary biology.

In the first part, students will receive training in modern methods for reconstructing the evolutionary history of species and specific traits. In the second part, we will cover a range of up to date and exciting topics in evolutionary biology, delivered by staff who are experts in their field;

Here students will learn about and discuss the cutting edge of important and generally applicable areas of evolutionary thought;

The module is taught via lectures, seminars, structured discussions and computer practicals; and assessed by formal examination and continuous assessment.

CURRENT TOPICS IN ANIMAL BEHAVIOUR (LIFE322)

Credits: 15 / Semester: semester 2

This module addresses contemporary topics in animal behaviour within an evolutionary framework. It combines current experimental and field research and links behaviour to other areas including ecology, neurobiology, comparative cognition and human evolution. The module is delivered through traditional lectures and a combination of guided and self-directed reading. The module is assessed by formal examination and continuous assessment.

INTEGRATIVE COMPARATIVE ANIMAL PHYSIOLOGY (LIFE339)

Credits: 15 / Semester: semester 1

This module will provide students with an insight into physiological mechanisms underpinning adaptations to potentially hostile environmental conditions such as anoxia, toxic sulphide, high hydrostatic pressure and extreme temperatures.

It will also explore the physiological mechanisms related to homeostasis and the evolution of air-breathing, terrestriality and endothermy.

The module will take an integrative approach, considering physiological mechanisms from molecules to cells, tissues, whole animals and the environment.

The module is taught through a mixture of pre-recorded short online lectures and synchronous online seminars and is assessed by coursework.

LIFE SCIENCES WORK BASED PLACEMENT (LIFE399)

Credits: 15 / Semester: semester 1

This module allows students to undertake an employment placement that will be undertaken during the summer-break between Year 2 and Year 3. Students will have to find and secure their own placement, which will need to be approved by the module leader beforehand. Placements will typically be 6-8 weeks. Early in Year 2 there will be an introductory event to present the module and advise students on how to search for placement opportunities. This session will be available to all students (including those who do not wish to enrol on the placement module). Students will be encouraged to search for placements during Semester 1, with the support of Academic Advisers and the Careers and Employability Service. Other seminar activities will take place during Semester 2 of Year 2 to prepare students for the placement work. More taught sessions will be delivered in early Semester 1 of Year 3, which include lectures on relevant psychological theories and research (e.g., workplace performance, leadership, motivation) and reflective group sessions on placement experience. The module will provide students with an opportunity to develop their employability skills by direct engagement in a commercial, research, voluntary or similar professional organisation that will support future plans, develop skills and graduate attributes. Module assessments include a skill audit and reflective log to be completed before and during practical work placement, and final written recommendations-to-employer report based on reflection on the placement experience of the individual student and the wider cohort, supported by relevant employability and occupational theories.

BECOMING HUMAN: GENOMICS, DEVELOPMENT, AND EVOLUTIONARY ANTHROPOLOGY (LIFE364)

Credits: 15 / Semester: semester 2

This module takes an interdisciplinary approach to examine human evolution. Beginning with the human genome and how it has evolved, the module moves through the biological scales to examine how the genome has shaped developmental evolution in the human lineage, and finally the adaptations that this developmental evolution produced in the Homo lineage since it split with chimpanzees.

The module will utilise a variety of learning strategies to facilitate student-led and active learning. The teaching sessions will include significant workshop components and problem solving elements. In some cases these will stand independently as traditional lectures/seminars, and in some cases flipped classroom workshop approaches will be used, with material delivered in advance online. In the workshop sessions, students will then engage in activities including debates, small group discussions, and presentations. Supporting materials such as recorded lectures, links to online resources and literature will be provided on VITAL. Students will be guided to key articles (reviews, primary literature) and textbooks which will support learning. Opportunities for individual feedback on learning will be provided.

The module will be assessed through a combination of coursework and a final examination.

Programme details and modules listed are illustrative only and subject to change.

YEAR FOUR

Students can transfer into the C900 (M BiolSci) programme to complete a four-year integrated master's (subject to performance). This offers 6-week

internships and one-year placement opportunities in the UK or abroad (subject to availability).

Programme details and modules listed are illustrative only and subject to change.

HOW YOU'LL LEARN

You'll learn through a balanced mix of lectures, workshops, field work, seminars and tutorials as well as hands-on, practical laboratory sessions, working individually and in small groups.

HOW YOU'RE ASSESSED

Assessed work including essays, presentations, group work, qualitative and experimental reports together with examination results from years one, two, three contributing to your final degree classification.

LIVERPOOL HALLMARKS

We have a distinctive approach to education, the Liverpool Curriculum Framework, which focuses on research-connected teaching, active learning, and authentic assessment to ensure our students graduate as digitally fluent and confident global citizens.

Careers and employability

Employability is embedded into the Zoology BSc (Hons) programme and can be the necessary stepping stone into a successful career in many sectors such as government agencies, animal charities and welfare groups, wildlife parks and conservation projects. Alternatively you may choose to opt to study for a Masters or PhD or Postgraduate Certificate in Education (PGCE) or Veterinary Science .

4 IN 5 LIFE SCIENCES STUDENTS FIND THEIR MAIN ACTIVITY AFTER GRADUATION MEANINGFUL.

Graduate Outcomes, 2018-19.

Recent employers include:

- AstraZeneca
- BBC
- Chester Zoo
- Home Affairs and Security
- Royal Society of Biology
- The Environment Agency

PREPARING YOU FOR FUTURE SUCCESS

At Liverpool, our goal is to support you to build your intellectual, social, and cultural capital so that you graduate as a socially-conscious global citizen who is prepared for future success. We achieve this by:

- Embedding employability within your curriculum, through the modules you take and the opportunities to gain real-world experience offered by many of our courses.
- Providing you with opportunities to gain experience and develop connections with people and organisations, including

student and graduate employers as well as our global alumni.

- Providing you with the latest tools and skills to thrive in a competitive world, including access to Handshake, a platform which allows you to create your personalised job shortlist and apply with ease.
 - Supporting you through our peer-to-peer led [Careers Studio](#), where our career coaches provide you with tailored advice and support.
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Fees and funding

Your tuition fees, funding your studies, and other costs to consider.

TUITION FEES

Tuition fees cover the cost of your teaching and assessment, operating facilities such as libraries, IT equipment, and access to academic and personal support. [Learn more about tuition fees, funding and student finance.](#)

UK fees Also applies to Channel Islands, Isle of Man and Republic of Ireland	
Full-time place, per year	£9,250
Year in industry fee	£1,850
Year abroad fee	£1,385

International fees	
Full-time place, per year	£25,450

Fees stated are for the 2023-24 academic year.

ADDITIONAL COSTS

We understand that budgeting for your time at university is important, and we want to make sure you understand any course-related costs that are not covered by your tuition fee. This includes the costs associated with placements or internships, and the optional field course in Uganda.

Find out more about the [additional study costs](#) that may apply to this course.

SCHOLARSHIPS AND BURSARIES

We offer a range of scholarships and bursaries to help cover tuition fees and help with living expenses while at university.

[Scholarships and bursaries you can apply for from the United Kingdom](#)

Select your country or region for more scholarships and bursaries.

Entry requirements

The qualifications and exam results you'll need to apply for this course.

Your qualification	Requirements About our typical entry requirements
A levels	<p>Typical A level offer ABB</p> <p>Applicants with the Extended Project Qualification (EPQ) are eligible for a reduction in grade requirements. For this course, the offer is BBB with A in the EPQ.</p> <p>You may automatically qualify for reduced entry requirements through our contextual offers scheme.</p> <p>If you don't meet the entry requirements, you may be able to complete a foundation year which would allow you to progress to this course.</p> <p>Available foundation years:</p> <ul style="list-style-type: none">• Biological Sciences (with a Foundation Year) leading to BSc (Hons)
GCSE	4/C in English and 4/C in Mathematics
Subject requirements	<p>Biology and a second science, preferably Chemistry, at A level</p> <p>Also accepted as a second science: Environmental Science, Mathematics, Physics, Geography, Psychology, Geology and Applied Science.</p> <p>For applicants from England, where A levels in Biology, Chemistry or Physics have been taken, we will also require a pass in the Practical Endorsement</p>

Your qualification	Requirements About our typical entry requirements
BTEC Level 3 National Extended Diploma	<p>D*DD in Applied Science with a selection of preferred units in Biology and Chemistry, to include Distinction in Units 1 and 5 (Principles and Applications of Science I and II).</p> <p>For previous BTEC (QCF) qualification:</p> <p>D*DD in Applied Science with a selection of preferred units in Biology and Chemistry, with at least 120 Level 3 credits at Distinction.</p> <p>Please note alternative BTEC subjects are not acceptable for this programme.</p>
BTEC Applied Science unit requirements	<p>View the BTEC Applied Science unit requirements.</p>
International Baccalaureate	<p>33 points, including 6 in Higher Level Biology, and 5 in another Higher Level Subject</p>
Irish Leaving Certificate	<p>H1, H2, H2, H2, H3, H3 including grade H2 in both of High level Biology and second science.</p>
Scottish Higher/Advanced Higher	<p>Not accepted without Advanced Highers at grades ABB</p>
Welsh Baccalaureate Advanced	<p>Accepted at grade B as equivalent to a third non-science A level at grade B.</p>
Access	<p>45 Level 3 credits in graded units in a relevant Diploma, including 30 at Distinction and a further 15 with at least Merit. 15 Distinctions are required in each of Biology and Chemistry. GCSE Mathematics and English grade C also required.</p>

Your qualification	Requirements About our typical entry requirements
International qualifications	<div data-bbox="1002 331 1441 465" style="border: 1px solid #ccc; padding: 5px; text-align: center;"> Select your country or region to view specific entry requirements. </div> <p>Many countries have a different education system to that of the UK, meaning your qualifications may not meet our entry requirements. Completing your Foundation Certificate, such as that offered by the University of Liverpool International College, means you're guaranteed a place on your chosen course.</p>

ALTERNATIVE ENTRY REQUIREMENTS

- If your qualification isn't listed here, or you're taking a combination of qualifications, [contact us](#) for advice
 - [Applications from mature students](#) are welcome.
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