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| 4206NATSCI  Semester 1  *Biology* | GENETICS AND EVOLUTION  (20c) | *Aim:*  To i) explain fundamental principles in genetics and genomics, ii) describe evolutionary processes from a genetics/genomics perspective in order to explain the origins of genetic and species diversity. | *Learning activities:*  Lectures, workshops and laboratory practicals. | *Assessment:*  Online test (60%) Exam (40%) |
| 4207NATSCI  Semester 1  *Biology* | EVOLUTION AND INHERITANCE  (20c) | *Aim:*  To examine key concepts and processes in evolution and to describe the role that inheritance and variation play. To describe the fundamental genetic mechanisms of inheritance and to explore the role of genetics in animal behaviour and conservation. | *Learning activities:*  This module is delivered through a combination of lectures, practicals and computer workshops. | *Assessment:*  Final Exam (40%) Test (60%) |
| 4208NATSCI  Semester 1  *Biology* | ANIMAL BEHAVIOUR  (20c) | *Aim:*  To provide an introduction to the diversity of animal behaviour | *Learning activities:*  The module is delivered through a series of lectures covering basic concepts in behaviour. Practical experience of these behavioural concepts will be provided through a series of workshops, practicals and fieldwork. Workshops are also provided for coursework support and guidance. | *Assessment:*  Coursework portfolio (60%) Behaviour Exam (40%) |
| 4211NATSCI  Semester 1  *Biology* | PHYSIOLOGY  (20c) | *Aim:*  To provide an introduction to a number of physiological processes in living organisms. | *Learning activities:*  The module is to be delivered using lectures, practical classes, workshops and a group seminar exercise. | *Assessment:*  Online test (60%) Group presentation (40%) |
| 5201NATSCI  Semester 1  *Biology* | RESEARCH SKILLS AND EMPLOYABILITY  (40c) | *Aim:*  To increase understanding of the statistical analysis of data and the use of up to date statistical software and tools.  To have a clear understanding of graduate jobs opportunities and be able to prepare  a career plan. | *Learning activities:*  The module is delivered through lectures, workshops, tutorials, group meetings, role  play and directed study. The statistical lectures and workshops extend knowledge of  research design and statistical techniques suitable for the analysis of data from field  and laboratory practicals and projects using up to date statistical software and tools.  Preparation of a career plan comprises also substantial element of single and group  work and integrates online activities with workshop delivered by the career advisory  team of LJMU. A strong emphasis is put on self-directed study (including a large  component of group work) and the development of graduate skills for employability. | *Assessment:*  Stats Workshop (50%) Employability Portfolio (50%) |
| 5202NATSCI  Semester 1  *Biology* | ECOLOGY FIELD SKILLS  (20c) | *Aim:*  To demonstrate theoretical and practical aspects of ecology fieldwork methods on plants and animals in different habitats, with particular emphasis on ecological surveys and censuses of specific organismal groups and using GIS to organise and analyse spatial data in ecology. Development of the application of Species Identification techniques in ecology surveys | *Learning activities:*  Lectures, computer practicals (GIS), field investigation of a UK site, one week residential field course abroad, which includes execution and presentation of a two day research project. | *Assessment:*  UK field/GIS report (50%) Overseas report & presentation (50%) |
| 5203NATSCI  Semester 1  *Biology* | BEHAVIOURAL ECOLOGY  (20c) | *Aim:*  To study the effects of evolutionary & ecological selection pressures on the behaviour of animals. | *Learning activities:*  Module delivered using lectures, workshops and small group work. An observational project at Chester Zoo forms an important element of this module. | *Assessment:*  Zoo Project Report (50%) Online tests (50%) |
| 5204NATSCI  Semester 1  *Biology* | DIVERSITY AND EVOLUTION OF LIFE  (20c) | *Aim:*  To provide an introduction to the diversity of life on Earth. To explain origin and evolution of major taxonomic groups including prokaryotes and eukaryotes. To explain key evolutionary events such as transition from anaerobic to aerobic life, symbiosis and evolution of the eukaryotic cell, origin of multicellularity, colonization of land and air. | *Learning activities:*  The module will be delivered through a combination of lectures, practicals and workshops. | *Assessment:*  Examination (50%) Practical Write-Up (50%) |
| 5206NATSCI  Semester 1  *Biology* | ANIMAL EVOLUTION AND DIVERSITY  (20c) | *Aim:*  To provide an introduction to the evolution and diversity of the main invertebrate and  vertebrate groups, their distribution and coevolution with plants and other animals. | *Learning activities:*  The module will be delivered through a combination of lectures and practicals. | *Assessment:*  Exam (50%) Practical Report (50%) |
| 5210NATSCI  Semester 1  *Biology* | WILDLIFE FORENSICS  (20c) | *Aim:*  To introduce forensic methodologies in biological and environmental sciences  applicable to the study of wildlife crime. | *Learning activities:*  Module delivered using lectures, practicals and workshops. A range of practical  techniques are introduced. | *Assessment:*  Examination (50%) Practical Report (50%) |
| 5216NATSCI  Semester 1  *Biology* | BRAIN, HORMONES and BEHAVIOUR  (20c) | *Aim:*  The aim of this module is to gain an overview over the function of the nervous and endocrine system, how it is interconnected, how it is influenced by the environment and how it affects animal behaviour. A second aim is to receive practical training in up-to-date methods used in this field and to learn how the achieved skills can be applied to own behavioural studies and studies on conservation and animal welfare. | *Learning activities:*  This module is delivered through the combination of lectures, practicals and workshops. | *Assessment:*  Lab report (60%) Poster (40%) |
| 6203NATSCI  Semester 1  *Biology* | APPLICATIONS OF GENETICS IN HEALTH AND DISEASE  (20c) | *Aim:*  This module aims to investigate how genetics and genomics can be used to understand a range of physiological processes in health and disease. | *Learning activities:*  This module will be delivered using a combination of lectures, practicals and workshops. | *Assessment:*  Examination (50%) Practical Report (50%) |
| 6204NATSCI  Semester 1  *Biology* | FRONTIERS OF ECOLOGY  (20c) | *Aim:*  Aims  (a) to provide an in-depth discussion of selected current research topic areas in ecology reflecting the interests of staff members.  (b) to demonstrate how hypotheses are developed, tested and validated in modern ecology. | *Learning activities:*  This module will be taught primarily by lectures, practicals and workshops. | *Assessment:*  Locust Grazing Practical (50%) Exam (50%) |
| 6207NATSCI  Semester 1  *Biology* | CURRENT TOPICS IN ZOOLOGY  (20c) | *Aim:*  This course aims to build on the physiological concepts taught in the level 5 module  Comparative Animal Physiology, and to introduce new concepts and skills  appropriate to level 6. The module is designed to be research-led, and will focus on  topics closely linked to the research interests and expertise of the teaching team. | *Learning activities:*  The course will have 22 hours of lectures, delivered mainly in a research-seminar  format, focusing on current areas of zoology research. The 14 hours of workshops and 2 hours of online activities  will include practical laboratory activities, computer activities, and experimental  design activities, and will usually be preparatory exercises for the 12 hours of  practical work. | *Assessment:*  group wiki/practical report (50%) essay (50%) |
| 6210NATSCI  Semester 1  *Biology* | ZOO CONSERVATION AND GENEBANKS  (20c) | *Aim:*  The aim of the module is to provide students with an understanding of the role of ex situ Conservation in maintaining global biodiversity and the methods used in maintaining ex situ collections of animal and plants. | *Learning activities:*  The module will be taught through lectures, workshops and fieldtrips | *Assessment:*  Report (50%) Examination (50%) |
| 6211NATSCI  Semester 1  *Biology* | NEUROBIOLOGY  (20c) | *Aim:*  This course aims to develop in-depth understanding of how the nervous system is organised and functions at the molecular, cellular and divisional level, and of the biophysical methods used to study these. The role of genetic factors and drugs, toxins or other pharmacological agents on producing  disease or modified neurobiological function will be explored. This course aims to enhance the student learning experience by discussing recent and relevant research undertaken by members of the teaching team. | *Learning activities:*  This module will be delivered using a combination of lectures, practicals and workshops. | *Assessment:*  Examination (50%) Practical report (50%) |
| 6215NATSCI  Semester 1  *Biology* | ANIMAL WELFARE  (20c) | *Aim:*  To provide knowledge and understanding of the behaviour and welfare of captive animals that can be applied to effective management. | *Learning activities:*  The module is taught via a series of lectures and workshops supported by web-based material. Small group workshops are used for a problem-based learning exercise. Through enquiry with a tutor and information searches, a range of possible solutions are proposed to a behavioural problem presented by a small group as a seminar. | *Assessment:*  Examination (40%) Group presentation (60%) |
| 6216NATSCI  Semester 1  *Biology* | ADVANCES IN ANIMAL BEHAVIOUR  (20c) | *Aim:*  To provide an in-depth discussion of selected topical issues in animal behaviour reflecting the interests of staff members. To demonstrate how research in animal behaviour can be used to inform management of animals in a range of contexts. | *Learning activities:*  The module is delivered through a combination of lectures, off-site visits to zoos and  other organisations that maintain domestic / captive wild animals, and workshops. | *Assessment:*  Poster Presentation or Essay (50%) Husbandry Report (50%) |
| 7110NATSCI  Semester 1  *Biology* | DRONE TECHNOLOGY AND OPERATIONS  (40c) | *Aim:*  To provide a comprehensive overview of drone technology, practical operation, mission planning, regulations and data processing | *Learning activities:*  The module will be taught by a combination of lectures; practical laboratory based sessions, centred around setting up and maintaining drones, fitting and testing payloads; workshop sessions involving mission planning for way-point flying; fieldwork involving testing actual drones and mission plans in the field centred initially around basic exercises then expanding to mimicking typical operations. | *Assessment:*  Drone Operation Project (30%) Practical Flight Assessment (30%) Mission Planning Project (40%) |
| 7112NATSCI  Semester 1  *Biology* | CONTEMPORARY METHODS IN PRIMATOLOGY  (40c) | *Aim:*  To provide a comprehensive overview of a range of most recent advances in laboratory and field based methods to study primate behaviour, cognition and physiology at a conceptual and practical level. Special emphasis is placed upon being able to select methods, and design and execute studies to effectively test hypotheses about the biological bases and social components of primate behaviour. | *Learning activities:*  The module will be taught by a combination of lectures, practical laboratory sessions, and off-site visits. | *Assessment:*  Poster & short presentation (100%) |
| 7115NATSCI  Semester 1  *Biology* | VIRTUAL METHODS AND GIS  (20c) | *Aim:*  To provide the student with a systematic understanding and critical awareness of current methods and questions applied in the field of human cultural and biological evolution through the approaches of palaeoarchaeology, biological anthropology and genetics. The student will gain skills to critically analyse and interpret the archaeological and fossil record of our lineage. Different types of scientific data sets, such as palaeoanthropology datasets, ancient DNA sequences. lithic assemblages, radiocarbon dates (C14 dating), and stable isotopes will be examined. | *Learning activities:*  The module team will provide a series of lectures and workshops (with practical components) informed by current professional practice and literature. | *Assessment:*  Test on Human Evolution (50%) aDNA Report (50%) |
| 7131NATSCI  Semester 1  *Biology* | RESEARCH METHODS AND STATISTICS  (20c) | *Aim:*  To present students with key statistical methods relevant to the study of plant, animal and human health and disease, and to enable them to further develop research skills in order to become independent researchers. | *Learning activities:*  The module is mostly practical; students will learn through groups and individual workshops. | *Assessment:*  Exam (40%) Research grant proposal (60%) |
| 7133NATSCI  Semester 1  *Biology* | CURRENT TOPICS IN PHYSIOLOGY AND METABOLISM  (20c) | *Aim:*  To provide an understanding of advanced and cutting edge topics in physiological and metabolic sciences relevant to plants, animals and humans. | *Learning activities:*  The module will be delivered primarily using a problem-based learning approach, supported by tutorials and lectures. The students will work in groups to research a series of case studies guiding them through relevant advanced course material. Practical classes will provide opportunities to develop wet lab experience and relevant practical skills. Seminars will offer opportunities for critical evaluation of cutting edge research. | *Assessment:*  EXAM (40%) CASE STUDY PORTFOLIO (60%) |
| 7134NATSCI  Semester 1  *Biology* | PARASITES, PATHOGENS AND INFECTION  (20c) | *Aim:*  To gain knowledge of the biology of major endemic, epidemic and zoonotic infectious diseases of humans, animals and plants, at both the individual and the community levels.  To learn and evaluate methods of controlling the risk and occurrence of infectious diseases and the evolutionary responses of pathogens and vectors to control. | *Learning activities:*  The module is delivered through a combination of lectures, practical sessions and workshops. | *Assessment:*  ORAL PRESENTATION (40%) PRACTICAL REPORT (60%) |
| 4209NATSCI  Semester 2  *Biology* | ECOLOGY  (20c) | *Aim:*  To investigate basic ecological concepts and the ecological characteristics of a range of habitats. | *Learning activities:*  Students undertake a programme of field visits to a range of habitats and participate in a variety of workshop activities linked to the lecture programme. | *Assessment:*  Fieldwork report (50%) Exam MCQ (50%) |
| 4210NATSCI  Semester 2  *Biology* | ANIMAL PHYSIOLOGY  (20c) | *Aim:*  To provide an introduction to the major physiological processes and homoeostasis in  animals. Adopting an adaptive approach, this module follows the development of  animal organ systems according to influential environmental drivers. | *Learning activities:*  Group seminar work  Workshops for reading, literature searching and exam technique skills  Practicals. The ratio of staff to students is managed at 15:1 in practicals as they are supplemented by postgraduate demonstrators.  On line mobile phone friendly tests (on line activity) that reflect on previously taught sessions and look forward to the impending practical session.  Lectures | *Assessment:*  MCQ exam (50%) Group seminar (50%) |
| 5205NATSCI  Semester 2  *Biology* | GENES AND GENOMES  (20c) | *Aim:*  To examine the state of the art genetic and genomic tools and techniques used to understand how genes combine with the environment to control phenotypes. To appreciate how knowledge of processes occurring at a genome level is important for the understanding of the nature of species. | *Learning activities:*  The module is delivered through a combination of lectures, practicals and workshops. | *Assessment:*  Practical Report (50%) Final Exam (50%) |
| 5207NATSCI  Semester 2  *Biology* | WILDLIFE AND ECOSYSTEM MANAGEMENT  (20c) | *Aim:*  a) To provide an advanced course in general ecology and wildlife population  management.  Page 2 of 4  b) Illustrate the inter-linkages between flora and fauna populations and  biogeochemical cycles on different spatial and temporal scales.  c) Relate key wildlife population, ecology and ecosystem theories to the applied  management of populations, habitats and ecosystems. | *Learning activities:*  This module will comprise a series of lectures, supported by fieldtrips. Students will  be able to collect their own data and examine the impact of management on  conservation during the fieldtrips. There will also be workshops looking at linking  together the theories covered with conservation case-studies and to revise the  module material. | *Assessment:*  Field report (60%) Examination (40%) |
| 5208NATSCI  Semester 2  *Biology* | CONSERVATION PRACTICE AND MANAGEMENT SKILLS  (20c) | *Aim:*  This module aims to introduce students to conservation practice and management through largely field based activities on sites of conservation protection or importance. The module is developed to work alongside conservation practice organisation. Students will gain knowledge on development, implementation of conservation management plans, protected area designation and other conservation practices such as habitat restoration and agri-environment schemes. | *Learning activities:*  The module will be largely field based, supported by lectures and workshops | *Assessment:*  Management Plan (40%) Field Report (60%) |
| 5209NATSCI  Semester 2  *Biology* | MARINE AND FRESHWATER BIOLOGY  (20c) | *Aim:*  To provide a broad-based foundation to major biological, physico-chemical and oceanographic features of the marine and freshwater environment on a world-wide basis. To introduce marine and freshwater habitat types and their communities and  to examine selected habitats in terms of general ecological principles and animal behaviour. To examine the exploitation of marine and freshwater resources and potential sources of damage and threats to marine and freshwater ecosystems. To adopt practical field and laboratory sampling and analysis techniques relevant to the study of marine and freshwater biology. | *Learning activities:*  The module is delivered through lectures, practical work in the field and laboratory  (practical, offsite, workshop). | *Assessment:*  Poster (40%) Half Report (40%) Online test on methods (20%) |
| 5212NATSCI  Semester 2  *Biology* | PHYSIOLOGY OF LIFE  (20c) | *Aim:*  To provide a deeper knowledge of physiology, building upon the concepts introduced at level 4, and to apply that knowledge in a health-related setting. | *Learning activities:*  Lectures, practical classes, workshops, poster presentations and tutorials. | *Assessment:*  Poster (40%) Portfolio (60%) |
| 5213NATSCI  Semester 2  *Biology* | ANIMAL FIELD SKILLS  (20c) | *Aim:*  To demonstrate theoretical and practical aspects of animal ecology field survey methods in different habitats, with particular emphasis on animal census, biodiversity assessment, and behavioural ecology. | *Learning activities:*  The module will be delivered through a combination of lectures, fieldwork and a week-long residential field course abroad (which includes execution and presentation of a 2-day research project). | *Assessment:*  Field presentation/report (60%) Small mammal field report (40%) |
| 5214NATSCI  Semester 2  *Biology* | DEVELOPMENTAL BIOLOGY  (20c) | *Aim:*  To explain the molecular mechanisms by which animals and plants grow and develop and how this has been advanced with the use of state-of-the-art methodologies. To discuss how the mechanisms of body plan development is conserved across animals. To explain how the study of developmental biology has generated modern transgenic and stem cell biology for the practical benefit of human health. | *Learning activities:*  The module is delivered through a combination of lectures, practicals and workshops. | *Assessment:*  Practical Report (50%) Exam (50%) |
| 5215NATSCI  Semester 2  *Biology* | COMPARATIVE ANIMAL PHYSIOLOGY  (20c) | *Aim:*  The course aims to build on the concepts of animal physiology taught at level 4, allowing students to gain practical skills and theoretical knowledge in key aspects of the main physiological systems of different animal phyla. The course content will  reflect the expertise and research interests of the teaching team, allowing students to appreciate how the taught content integrates with current research. The course is also designed to prepare students for advanced physiological studies in the level 6 module Current Topics in Zoology. | *Learning activities:*  The module is designed to be 50% lecture based, with 50% of the taught hours comprising practicals, workshops and an offsite trip to an aquarium or zoo. The workshops will feature a strong practical element, and may involve computer-based activities, or preparatory activities to gain laboratory skills needed for the practical classes. | *Assessment:*  Practical report on chemotaxis (50%) Seminar presentation (50%) |
| 5217NATSCI  Semester 2  *Biology* | ANIMAL COMMUNICATION  (20c) | *Aim:*  This module will provide background to the topic of animal communication, from its evolution and function, to its flexibility and adaptation to human dominated landscapes. The systems and modes of animal communication will be examined as will the wide range of communication across the animal kingdom and finally, how animal communication compares to human language. | *Learning activities:*  The module is delivered through a combination of lectures, practicals, fieldwork and workshops. | *Assessment:*  In Class Presentation (50%) Essay (50%) |
| 5218NATSCI  Semester 2  *Biology* | ANIMALS IN MOTION  (20c) | *Aim:*  This module aims to provide a comprehensive background and understanding of animal locomotion and movement. We will investigate the process and mechanisms of motion from its physiological bases through whole animal mechanics, and group level migrations. | *Learning activities:*  This module is delivered through a combination of lectures, practicals and computer workshops. | *Assessment:*  Examination (50%) Practical Report (50%) |
| 5223NATSCI  Semester 2  *Biology* | COMPANION ANIMAL BEHAVIOUR  (20c) | *Aim:*  To evaluate the behaviour and welfare of companion animals. | *Learning activities:*  The module is delivered via a series of lectures, workshops, practicals and fieldwork. A number of lectures are delivered by external specialists to provide work-related learning opportunities. | *Assessment:*  Online Tests (50%) Training & Welfare evaluations (50%) |
| 6104BMBMOL  Semester 2  *Biology* | CANCER  (20c) | *Aim:*  To provide a bench to bedside approach to cancer underpinning the key molecular and cellular events during initiation and progression of cancer, and an appreciation of diagnostic techniques and therapies available. | *Learning activities:*  Lectures, workshops, offsite visit, seminar, tutorial | *Assessment:*  Exam (50%) Prepare a scientific poster (50%) |
| 6208NATSCI  Semester 2  *Biology* | ANIMAL LEARNING AND COGNITION  (20c) | *Aim:*  1) to integrate behaviour, physiology and animal psychology in the study of animal  learning and cognition  2) to interpret animal learning from an ecological and evolutionary perspective | *Learning activities:*  The module comprises a series of lectures, workshops and practicals supported by web-based material and assignments. | *Assessment:*  practical report (50%) group presentation (50%) |
| 6209NATSCI  Semester 2  *Biology* | COMPANION ANIMAL BEHAVIOUR  (20c) | *Aim:*  To evaluate the behaviour and welfare of companion animals. | *Learning activities:*  The module is delivered via a series of lectures, workshops, practicals and fieldwork. A number of lectures/workshops are delivered by external specialists to provide work-related learning opportunities. | *Assessment:*  Welfare Problem Scenario (50%) Human-Animal Bond & Training (50%) |
| 6212NATSCI  Semester 2  *Biology* | PARASITOLOGY  (20c) | *Aim:*  To familiarise students with some of the most important protozoan, helminth and  arthropod parasites of humans and domesticated animals, their biology, treatment  and control. | *Learning activities:*  The module will comprise a series of lectures, workshops, and practicals. | *Assessment:*  Practical Report (50%) Exam (50%) |
| 6213NATSCI  Semester 2  *Biology* | APPLIED MARINE BIOLOGY  (20c) | *Aim:*  To advance understanding of major biological features of the marine environment, the impacts of man as well as the exploitation of marine resources. Including developing an understanding of many practical skills required within the marine science sector. Develop an advanced understanding of the physiology, ecology, genetics and behaviour of marine organisms in a number of major taxonomic groups. Off site trips and practical work will develop skills in sampling and analysis methods relevant to the marine sciences. To plan, prepare and execute a scientific project and evaluate the results to produce a presentation. | *Learning activities:*  The module is delivered through lectures, workshops, practical work in the field and laboratory (practical, offsite). | *Assessment:*  Essay (40%) Presentation (60%) |
| 6214NATSCI  Semester 2  *Biology* | FORENSIC BIOSCIENCE  (20c) | *Aim:*  To critically review how biological evidence can contribute to a wide range of forensic  investigations. | *Learning activities:*  Lectures, practicals and workshops. A range of practical techniques are introduced. | *Assessment:*  Practical Report (50%) Exam (50%) |
| 6218NATSCI  Semester 2  *Biology* | CONTEMPORARY ISSUES IN CONSERVATION  (20c) | *Aim:*  (a) to provide an in-depth discussion of selected current research topic areas in  conservation biology reflecting the interests of staff members.  (b) to demonstrate the practical use of research in wildlife management through  research informed conservation. | *Learning activities:*  This module will be taught primarily by lectures, practicals and workshops. | *Assessment:*  Population Viability Analysis (50%) Exam (50%) |
| 6219NATSCI  Semester 2  *Biology* | CURRENT TOPICS IN PRIMATOLOGY  (20c) | *Aim:*  To provide an overview of current theories explaining the evolution, ecology and behaviour of primate species from different social systems | *Learning activities:*  A combination of lecture, seminar (journal article discussion), fieldwork, practical, and workshop hours. | *Assessment:*  Poster of report (50%) Presentation (50%) |
| 7113NATSCI  Semester 2  *Biology* | FIELD METHODS IN PRIMATE BEHAVIOURAL ECOLOGY  (20c) | *Aim:*  To provide a comprehensive overview of a range of field based methods to study primate feeding ecology at a conceptual and practical level. Special emphasis is placed upon being able to select methods, and design and execute studies to effectively test hypotheses about the ecological and environmental components triggering primate behaviour and primate behaviour influencing ecological and environmental components. | *Learning activities:*  The module will be taught offsite combining lectures, workshops, and fieldwork. Emphasis will be on guided hands-on activities. | *Assessment:*  Field report (100%) |
| 7116NATSCI  Semester 2  *Biology* | ARCHAEOLOGICAL FIELD SKILLS  (20c) | *Aim:*  The aim of this module is to immerse the students in archaeological fieldwork methods and post-excavation analyses. By the end of the module students will have a thorough understanding of excavation and field research design, the interpretation of archaeological landscapes, site surveying techniques, interpretation of site formation processes, best excavation practices and writing up final reports for research and commercial excavations. Sampling strategies and post-excavation analyses for archaeological and environmental materials will also be taught.  The aim of the practice component of this module is for students to gain competency in archaeological excavation. | *Learning activities:*  This module will be delivered through hands-on workshops, lectures and fieldwork. A competency placement will consist of a minimum of 60 hours of excavation or post-excavation practice in an archaeological site. | *Assessment:*  Fieldwork Report (50%) Post-excavation report (50%) |
| 7117NATSCI  Semester 2  *Biology* | VIRTUAL METHODS AND GIS  (20c) | *Aim:*  This module consists of two components: 1) Virtual methods and 2) Geographic Information Systems (GIS)  This module provides an overview of virtual method and GIS applications in the field of palaeoarchaeology and human evolution: from data collection to analysis using multivariate statistical approaches. | *Learning activities:*  This course will be delivered through lectures and interactive workshops. In addition, students will work with a personal tutor in preparation of their report. This work may involve critical reading, experiments, data collection and writing a journal style article. The report topic cannot be the dissertation topic. | *Assessment:*  Analytical report (70%) Short answer test (30%) |
| 7132NATSCI  Semester 2  *Biology* | OMICS IN HEALTH AND DISEASE  (20c) | *Aim:*  To give students a thorough practical knowledge of the applications of omics (genomics, epigenomics, transcriptomics, metagenomics, proteomics, metabolomics) in the study of health and disease. | *Learning activities:*  A range of applications, from basic biology to applied applications, will be used to illustrate the uses of these technologies. Teaching will be primarily practical, supported by lectures and workshops. A typical teaching day would be structured to have a lecture on a topic, followed by a practical/workshop session to gain hands-on experience of analysing data relevant to that topic. Practical sessions will be a combination of wet-lab and computational data analysis. | *Assessment:*  PRACTICAL REPORT (60%) POSTER (40%) |
| 7135NATSCI  Semester 2  *Biology* | FOOD SECURITY, NUTRITION AND HEALTH  (20c) | *Aim:*  To explain the major links between food production and availability, nutrition, and health, both at the individual and the population levels, from small communities to the global perspective. | *Learning activities:*  This module will be delivered though a problem-based learning approach, using a combination of workshops and lectures supported by laboratory practical sessions. | *Assessment:*  PORTFOLIO (60%) EXAM (40%) |
| 7136NATSCI  Semester 2  *Biology* | NEURO-ENDOCRINOLOGY  (20c) | *Aim:*  To provide an understanding of advanced and cutting edge topics in neuroendocrinology within the context of health and disease of plants, animals and humans. | *Learning activities:*  The module will be delivered primarily using a problem-based learning approach, supported by tutorials and lectures. The students will work in groups to research a series of case studies guiding them through relevant advanced course material. Practical classes will provide opportunities to develop wet lab experience and relevant practical skills. Seminars will offer opportunities for critical evaluation of cutting edge research. | *Assessment:*  PORTFOLIO (60%) EXAM (40%) |
| 4201NATSCI  Yearlong  *Biology* | FUNDAMENTALS OF SCIENTIFIC RESEARCH  (20c) | *Aim:*  To enable students to develop a range of academic, research and transferable skills related to their programme of study. | *Learning activities:*  The module will be taught by a combination of three different modes of study including (1) 'traditional' lectures, workshops & tutorials, (2) problem-based learning via social media and (3) 'hands-on' maker education sessions via hackshops. | *Assessment:*  Data Presentation & Analysis (45%) Scientific Communication (45%) Self-awareness Statement (10%) |
| 4202NATSCI  Yearlong  *Biology* | PRACTICAL SKILLS FOR BIOLOGY  (20c) | *Aim:*  To acquire and demonstrate theoretical and practical knowledge of laboratory and field-based methods in modern biology, with particular emphasis on familiarizing with basic laboratory techniques and equipment, ethics, and safe working practices. | *Learning activities:*  The module will be delivered through a combination of lectures, laboratory practicals, workshops and field investigations in the UK. | *Assessment:*  Blog post (40%) Practical Test (60%) |
| 4203NATSCI  Yearlong  *Biology* | SKILLS FOR WILDLIFE CONSERVATION  (20c) | *Aim:*  The aim of the module is to provide student an introduction to the key practical skills required for careers in Wildlife Conservation. Students will develop knowledge on various identification and surveying techniques for animal and plant taxonomic groups. Student will also develop skills in current techniques such as Geographical Information systems. | *Learning activities:*  The module will be delivered largely through fieldtrip and laboratory and computer practicals, supported by lectures and workshops | *Assessment:*  Animal Survey Presentation (50%) Plant ID Portfolio (50%) |
| 4204NATSCI  Yearlong  *Biology* | PRACTICAL SKILLS FOR ZOOLOGY  (20c) | *Aim:*  To provide a robust introduction to key laboratory and field skills relevant to the study of zoology. To introduce concepts of 'Good Laboratory Practice (GLP)' and safe and ethical working practices in the biosciences. | *Learning activities:*  The module will be delivered through a combination of lectures, workshops, practicals, museum visits and field investigations in the UK. | *Assessment:*  Practical Test (60%) Blog post (40%) |
| 4205NATSCI  Yearlong  *Biology* | PRACTICAL SKILLS FOR ANIMAL BEHAVIOUR  (20c) | *Aim:*  To develop theoretical, practical, and analytical skills to conduct animal behaviour fieldwork, with particular emphasis on how to sample behaviour, assess animal resource and threat abundance and distribution, as well as overall habitat characteristics. | *Learning activities:*  This module is delivered through a combination of lectures, field trips and a seminar for student presentations. | *Assessment:*  Practical report (60%) Group presentation (40%) |