UNIVERSITY OF CAMBRIDGE

Programme Specification 2020-21

VETERINARY SCIENCE TRIPOS

Awarding body	University of Cambridge
Teaching institution	Faculty of Biological Sciences
Accreditation details	Royal College of Veterinary Surgeons
Name of final award	B.A. (Hons) (for all students) 2nd Vet MB
Programme title	Veterinary Sciences
UCAS code	D100MB/ VetMB
HECoS code(s)	100531 (veterinary medicine)
Relevant QAA benchmark statement(s)	Veterinary Medicine
Qualifications framework level	6 (Honours)
Date specification produced	April 2021

Programme Aims of Veterinary Sciences (Part I)

In the first two years, vets study for both the Tripos and for the professional qualification of 2nd Vet MB. Some courses are assessed for both qualifications; some are for professional purposes only.

The programme aims to:

1) to provide high quality education in clinically relevant biosciences leading to intellectually self-reliant graduates of the calibre sought by the profession.
2) to provide a stimulating and challenging learning environment where teaching is informed and enhanced by research to international standards of excellence.
3) to provide training and experience in the scientific principles and practice of research and its evaluation.
4) to continue to attract outstanding students from a variety of backgrounds, and to develop their potential to enable them to contribute fully to the cultural and intellectual base of society.
5) to contribute to the national and international needs for practitioners and leaders in the veterinary professions.

Programme Outcomes for Veterinary Sciences (Part I)

By the end of the first two years (VetST Part IA and IB) preclinical students should have:

1) knowledge and understanding of the basic principles and processes of biomedical science;
2) been introduced to common forms of disease and the contribution made by biomedical science to understanding their basis;
3) begun to develop observational and deductive skills in associating molecular and cellular events with the outcomes of disease;
4) acquired basic laboratory manipulative skills and begun to develop skills in analysis and interpretation of experimental data;
5) acquired basic information technology skills in searching for and retrieving information;
6) begun to develop skills in oral and written communication and in learning through curiosity;
7) begun to develop skills in listening to and dealing with patients;

8) become aware of the standards of competence, care, conduct and responsibilities expected of a member of the veterinary profession;
9) become enabled to progress to clinical training.

Teaching and Learning Methods

Each subject within Part I of the course employs a variety of teaching and learning methods, including lectures, small-group teaching sessions (supervisions), computer work, practical classes, and problem based learning. In addition, vets engage in practical animal handling as part of the Principles of Animal Management course. Self-directed learning modules and other additional audio-visual resources are provided in the Virtual Learning Environment (Moodle) as part of a blended learning programme. Veterinary students also undertake animal management placements across a range of species through the Extra Mural Studies programme.

At Part II, in addition to lectures, students undertake a dissertation, based on literature review or laboratory project work.

Support for Students and their Learning

There is an extensive provision of student support and guidance, including the following:

1) Introductory sessions at the beginning of their first year.
2) Learning resources on the Virtual Learning Environment (Moodle) with self-directed modules and additional audio-visual materials.
3) Individual course handbooks and websites.
4) University, Departmental and College libraries and computing facilities.
5) Students are assigned a Director of Studies and a personal Tutor by their College.
6) Small group tutorials (supervisions) provided by Colleges with collaboration of Departments.
7) Extensive staff contact in practical classes.

Criteria for Admission

For admission in **veterinary medicine**, the requirements are:

1) students have to satisfy the course entry requirements, which are: A Levels in Chemistry and one of Biology/Human Biology, Physics, Mathematics.

2) the Cambridge course is scientifically demanding and nearly all successful candidates obtain at least the standard entry requirement that, since 2018, has been set at A*AA.

3) students must also undergo a check for any criminal record through the Disclosure and Barring Service (or similar if from overseas).

Mechanisms for evaluating and improving the quality of student learning support

Students have termly meetings with their College Tutor and Director of Studies to monitor and review their progress. This is facilitated by reports submitted to the Colleges by the student's supervisors on each course.

The College tutorial and pastoral system is supported by the Medical and Veterinary Student Progress Panel, which maintains a general overview of veterinary and medical student progression throughout both the preclinical and clinical course at Cambridge. It also monitors the cases of students who for one reason or another may be having problems with the course. This may be because of illness, personal difficulties or due to repeated examination failures.

Each course in the VetST has a course management (or teaching) committee, which regularly reviews the content of that course, student feedback and comments from examiners. Students are represented on these committees. There are also termly Course Panel meetings for each subject, at which several student representatives are present, and where the responses to feedback questionnaires returned by the year group are discussed.

All courses have External Examiners, who are required to submit a report on the examination to the University. This is normally responded to by the Head of Department, or an appointed deputy with appropriate input from the Director of Education for the School of Biological Sciences. The report and response is scrutinised by the General Board's Education Committee.

The first two years of the course are managed by the MVST I Committee. This Committee reports to the Faculty Boards of Biology and Veterinary Medicine and to the Veterinary Education Committee which take an overview of the whole course, pre-clinical and clinical, and advise on changes necessary to meet the standards and requirements of the relevant professional bodies. Students are represented on these committees and encouraged to survey their colleagues and raise matters for consideration.

All Departments teaching in the Tripos are reviewed by the General Board once every six years.

Assessment

The examination for each subject of VetST 1A and 1B is divided into three sections. Sections I and II are assessed for both the Tripos and the 2nd Vet MB. Section III is assessed for the Tripos only. In some subjects the section I and II papers are combined into a single paper.

- Section I is a theory paper, and is assessed either by MCQ or short notes.
- Section II is a practical or data handling paper, and is usually assessed by MCQ or short notes.
- Section III is an essay paper.

The Third Year

A range of courses is available in year three. Students may take in-depth courses in many of the subjects studied in their first two years; these are offered in the NST Part II courses. Students who wish to maintain breadth of study can combine courses from different departments in NST Part II BBS. Alternatively, they may choose to take courses in something rather different, such as Anthropology, Management Studies or Philosophy, subject to approval by the relevant Director of Studies, College and Department.

Outline of the Part I Veterinary Sciences Tripos

Individual courses focus on the "core" scientific knowledge, which vets need to have in order to cope with clinical practice.

Students who do not have A level Biology may take a short preparatory on-line course in **Cell Biology.** Students without A-level Mathematics are encouraged to take a preparatory course in basic mathematics 'Maths for freshers'.

First Year Courses Second Vet MB and Tripos

1) the overall layout of the structures of the body is covered in **Veterinary Anatomy and Physiology**
2) the chemical and molecular mechanisms underlying the functions of the body and the mechanisms that govern inheritance in **Molecules in Medical Science**

3) the mechanisms that underlie communication within the body, and the maintenance of the stability of the internal environment in **Homeostasis.**

4) how the diversity of cell types and their organisation within tissues contributes to body function is covered in **Histology.**

Second Vet MB

1) The **Principles of Animal Management** course comprises two components:
    i) fundamental principles of the important components of animal management, namely: nutrition, reproduction, breeding, housing and environmental control, behaviour, animal welfare and ethics
    ii) practical training in animal handling and restraint techniques
2) basic concepts of epidemiology and biostatistics as tools for critical assessment of the quality of scientific evidence and appropriate inference are introduced in **the Introduction to the Scientific Basis of Medicine**

Second Year Courses Second Vet MB and Tripos

1) the mechanisms by which drugs act upon the body are covered in **Mechanisms of Drug Action**
2) the biological processes underlying disease are dealt with in **Biology of Disease**
3) the structure and function of animal reproductive systems in **Veterinary Reproductive Biology**
4) the structure and function of the sense organs and the central nervous system and basis of animal behaviour are covered in **Neurobiology and Animal Behaviour**
5) further study of veterinary anatomy is undertaken in **Comparative Vertebrate Biology**

Second Vet MB

1) Vets undergo further development of experience in **Preparing for the Veterinary** Profession (PfVP).

The tables below summarise these courses and their assessment, and details of the aims and content of individual courses are provided in the following sections.

MVST Part IA (First Year) Veterinary Courses

	Course Name	Assessment	
Enabling courses	Cell Biology	not separately assessed	
Pre-Clinical courses	Homeostasis (HOM)	2nd Vet M.B.	Tripos
	Molecules in Medical Science (MIMS)	2nd Vet M.B.	Tripos
	Foundations of Evidence-Based Practice (FEBP)	2nd Vet M.B.	
	Veterinary Anatomy and Physiology (VAP)	2nd Vet M.B.	Tripos
	Histology	Assessed with HOM	
Clinical strand	Principles of Animal Management (PAM)	2nd Vet M.B.	

MVST Part IB (Second Year) Veterinary Courses

	Course Name	Assessment	
Pre-Clinical courses	Biology of Disease (BOD)	2nd Vet M.B.	Tripos
	Mechanisms of Drug Action (MODA)	2nd Vet M.B.	Tripos
	Veterinary Reproductive Biology (VRB)	2nd Vet M.B.	Tripos
	Neurobiology and Animal Behaviour (NAB)	2nd Vet M.B.	Tripos
	Comparative Vertebrate Biology (CVB)	2nd Vet M.B.	Tripos
Clinical strand	Preparing for the Veterinary Profession (PfVP)	2nd Vet M.B.	

Part IA Molecules in Medical Science (MIMS)

(Tripos, 2nd Vet MB)

This course is run by the Department of Biochemistry with contributions from the Departments of, Genetics, Pathology, Pharmacology and Veterinary Medicine, the Clinical School and MRC Human Nutrition Research

Aims

The course aims to provide students with a basic understanding of:

1) the molecular architecture of eukaryotic cells and organelles, including membrane structure and dynamics;
2) the principles of bioenergetics and enzyme catalysis;
3) the chemical nature of biological macromolecules, their three-dimensional construction, and the principles of molecular recognition;
4) dietary requirements of selected domestic animals and man;
5) the metabolism of dietary and endogenous carbohydrate, lipid and protein;
6) the principles and major mechanisms of metabolic control and of molecular signalling by hormones;
7) the control of cell proliferation;
8) how the DNA in a genome is organised, replicated and repaired;
9) how genetic information in the DNA is selectively expressed as functional RNA or proteins;
10) how genes are transmitted between generations, and how and when errors can arise;
11) how natural polymorphism and genetic variation can give rise to mutant genes, and how these genetic errors are inherited;
12) how inherited genetic errors can cause both single gene and multifactorial diseases and the consequences of this inheritance for individuals and populations;
13) the tools used in molecular genetics, and their potential applications to veterinary science;
14) from their own laboratory practice, the experimental dimension of the molecular approach to biology;
15) the significance for veterinary practice of the molecular approach to veterinary science;

Learning outcomes

By the end of the course, students should be able to:

1) demonstrate knowledge and understanding of the molecular machinery of living cells;
2) demonstrate knowledge and understanding of the principles that govern the structures of macromolecules and their participation in molecular recognition;
3) demonstrate knowledge and understanding of the principles and basic mechanisms of metabolic control and molecular signalling;
4) use basic laboratory skills and apparatus to obtain reproducible data from biochemical experiments;
5) implement experimental protocols, and adapt them to plan and carry out simple investigations;
6) analyse, interpret, and report to their peers on the results of their laboratory experiments;
7) participate in and report orally on team work investigations of problem-based assignments;
8) build on their knowledge and understanding in tackling more advanced and specialised courses, and to more widely pursue independent, self-directed and critical learning.

Teaching and Learning Methods

These include lectures, supervisions, practicals and linked discussions which include data interpretation and handling, problem-based learning, online exercises and a computer-based bioinformatics exercise.

Assessment

Assessment for this course is through MCQs, data handling exercises and an essay paper.

Part IA Homeostasis (HOM)
(Tripos, 2nd Vet MB)

This course is run by the Department of Physiology, Development and Neuroscience.

Aims

The course aims to:

1) provide students with an understanding of the fundamental scientific concepts, the core knowledge and clinical relevance of the homeostatic mechanisms and physiological functioning of the body, excluding the reproductive system, the sense organs and the central nervous system;
2) to develop students' investigative skills and familiarity with standard laboratory and clinical techniques of observation and measurement, and gain practice and confidence in applying theses skills, in a quantitative manner where appropriate.

Learning outcomes

By the end of the course of lectures students should understand the principles and have a core of knowledge of the individual topics set out in the course synopsis. They should also:

1) acquire a sense of the broad nature of homeostasis, of the integrated way in which the systems of the body interact in response to changes in conditions, and the types of inter- and intra-cellular communication that make this possible;
2) gain a preliminary sense of the consequences of malfunction of these systems;
3) meet the objectives for each set of lectures, which are set out in the individual lecture handouts.

Practicals

By the end of the course students should have:

1) learnt to observe and make intelligent deductions, relating the way in which real tissues behave to the necessarily abstracted descriptions in their lectures;
2) learnt to design procedures and experiments that efficiently address both pre-defined questions and also open –ended ones;
3) learnt the techniques of collection, analysis and presentation of numerical and graphical data, including methods for recognising and dealing with systematic and random errors of measurement;
4) gained experience in using modern experimental techniques and familiarity with common items of equipment, including the use of computers for data-acquisition, presentation and analysis, and also in simulations of biological systems;
5) learnt how to carry out skilled tasks in co-operation with others, and how to carry out procedures on human subjects with consideration and due regard to health and safety procedures and to ethical considerations;
6) by being subjects for experiments. Learnt at first-hand how physiological perturbations are reflected in subjective sensations, and something of what it is to be a patient rather than a practitioner;
7) gained manual dexterity in standard manipulative procedures, and particularly in the handling of biological tissue;
8) learnt to appreciate the intrinsic difficulties of experimental work on animal tissue and human subjects, and also to experience some of the pleasures that such investigation can bring.

Teaching and Learning Methods

These include lectures, supervisions, and practicals.

Assessment

Assessment for this course is through MCQs and short notes questions, data handling and analysis exercises and an essay paper. Students are also required to submit practical notebooks.

Part IA Histology
(Tripos, 2nd Vet MB)

This is a practical course run by the Department of Physiology, Development and Neuroscience.

Aims

The course aims to:

1) To provide students with an understanding of the microscopic structure of cells and tissues with an emphasis on the correlation between structure and function.
2) To provide a practical experience in the examination of the microscopic anatomy and ultrastructure of cells and tissues to complement other Part IA courses
3) To provide the basis of understanding of normal tissue structure needed for Part IB courses, such as Biology of Disease and Veterinary Reproductive Biology.

Learning outcomes

By the end of the course, students should be able to:

1) Use a binocular microscope.
2) Using light microscopy, recognise the principal types of cells and tissues, in tissue sections.
3) Form a conception of the structure of a tissue in three dimensions, from a two-dimensional image.
4) Interpret electron micrographs, including the identification of different types of cell organelles.
5) On the basis of 2, 3 and 4,correlate structural and functional features.
6) Recognise and describe the structural features of the cells and tissues involved in the following physiological functions: nervous and neuromuscular conduction, autonomic control, muscular contraction, cardiovascular, respiratory, renal and body-fluid balance, gastrointestinal, hepatic, pancreatic, temperature regulation and endocrine.
7) Understand the structural features that underlie the properties of cells (e.g. division, differentiation, polarity, secretion, movement) and how cells integrate with the extracellular matrix to form tissues.
8) Understand that hereditary diseases can result in alterations to the appearance and functions of cells and tissues, and thus that changes to histological structure are important in the diagnosis of disease.

Teaching and Learning Methods

Each class starts with a preparatory self-study guide using online resources. Students check their understanding of the self-study material with an online quiz with answers/explanation provided subsequently for revision. This is followed by a practical class involving student team-work in groups of three or four, and with the guidance and support from Demonstrators. The practical involves: examination of tissue specimens under a light microscope; examination of digital slides and of electron micrographs; and exercises to consolidate knowledge and introduce comparison between normal and disease tissues. Annotated digital slides are subsequently provided for revision.

Assessment

Assessment for this course is through MCQs. Histology is assessed as a component of Section II of the MVST Part IA Homeostasis examination. In recent years, Histology has contributed 10% to the Tripos mark for Homeostasis and 20% to the Second MB/Vet MB.

Part IA Foundations of Evidence-Based Practice (FEBP)
(2nd Vet MB)

This course is run by the School of Clinical Medicine. It is in two strands, Epidemiology and Medical Statistics.

Aim
To produce informed consumers of research who are equipped with an understanding of the fundamental principles underlying epidemiological and clinical research methods.

Objectives

1) to provide an understanding of basic concepts in epidemiology and their relevance to clinical practice and disease prevention in patients and in the community;
2) to introduce tools for critical assessment and evaluation of the quality of the scientific literature and appropriate application of findings to medical practice.

Learning outcomes

1) Describe at least one system for defining a focused clinical research question, e.g. PICO
2) Generate a focused clinical research question
3) Discuss a range of research methods and assess their suitability for addressing a given research question
4) Describe approaches to sampling and discuss the benefits and limitations of these
5) Describe a process for searching the literature for evidence relating to a research question
6) List the range of observational and interventional study designs and discuss the key features, strengths and limitations of each
7) Describe the rationale for and critique the use of statistics and statistical tests in research, including descriptive statistics, p values and confidence intervals
8) Construct a 2x2 table from data provided, calculate an OR and / or RR as appropriate, and interpret this finding
9) Define and discuss concepts of chance, bias, confounding and causality
10) Identify suitable statistical tests for hypothesis testing (one and two samples), explain the rationale for the choice and identify assumptions
11) Discuss the rationale for screening tests and describe the potential benefits and harms of screening
12) Define and interpret screening test characteristics such as sensitivity, specificity, predictive value and discuss their relevance to practice

Teaching and Learning Methods
Lectures and supervisions

Assessment
Assessment for this course is by an MCQ paper

Part IA Veterinary Anatomy and Physiology
(Tripos and 2nd Vet MB)

This course is run by the Department Physiology, Development and Neuroscience.

Aims

The course is designed for students studying to be vets who may end up in any of a huge range of different jobs, from practice (small, large, equine, mixed) to Government Departments (meat hygiene, public health) industry (pharmaceutical etc.), in zoos or labs, in welfare, in research, in teaching and so on. Hence the course aims to give an appreciation of the role of anatomy in:

1) diagnosing, treating and controlling disease in vertebrate animals;
2) the reproduction and husbandry of animals and their products;
3) its central contribution to biological science;
4) helping people enjoy, marvel or delight in the animals around us.

The focus is on the core anatomy of domestic mammals. Wild animals receive passing attention.

Objectives

By the end of the course students should:

1) understand the language of anatomy, sufficient to communicate fluently with clients and colleagues, and to comprehend texts and original articles. This means that students should not only be comfortable with formal jargon but also with colloquial terms too – practising vets spend more time talking to lay people than to other vets or scientists.
2) be familiar with anatomical principles.
3) know how to find anatomical information from personal observations, and the observations of others.
4) know essential anatomical detail relevant to commonplace veterinary activities.
5) have developed skills for learning anatomy, knowing how much to learn, recalling it and utilising it in the interpretation of living animals in various postures and physiological states.

Teaching and Learning Methods

These include lectures, supervisions and dissection and prosection classes.

Assessment

Assessment for this course is through MCQs, short answer questions, a practical and an essay paper.

Principles of Animal Management (PAM)
(2nd Vet MB)

This course is run from the Department of Veterinary Medicine in the first year.

Aims
The course programme is designed to provide a fundamental level of knowledge and understanding of the important features of animal management, namely nutrition, reproduction, genetics and breeding, housing and environmental control, behaviour animal welfare and ethics. The course will integrate this knowledge and understanding with an appreciation of the structure and economic basis of the major UK animal industries. Principles of animal requirements will be considered across species and details of the practical application of these principles within each of the important animal industries will be considered on a species basis. This approach aims to develop a deep understanding of the principles of animal management needed to underpin future training in the clinical aspects of veterinary science.

Learning objectives
By the end of the course, students should:

- appreciate of the role of important animal industries in the UK;
- understand the structure of the important UK animal industries for both farm and companion animal species and the economic importance of these industries;
- appreciate the differences in approach to the management of farm animals compared with companion animals;
- appreciate the main ethical theories underlying the use of animals by humans
- be familiar with the safe and appropriate ways to approach and handle commonly kept domestic animals using basic techniques;
- appreciate the basis of an animal's responses to changes in the climatic environment and how these influence housing needs, productivity and welfare outcomes;
- understand how the nutritional requirements of animals are determined and how feeding systems are formulated and their adequacy assessed;
- appreciate how animals are fed and housed in practice and how this together with an understanding of the elements of animal behaviour form a basis for a scientifically based appraisal of animal welfare;
- understand the role of veterinarians in providing advice on the management of farm and companion animals.

Teaching
By lectures, practicals and CAL packages.

Assessment
MCQs.

Preparing for the Veterinary Profession (PfVP)
(2nd Vet MB)

This course is run from the Department of Clinical Veterinary Medicine in the second year.

Aims
The students will gain an appreciation of the role of the veterinary profession in society in its widest sense.

Objectives
By the end of the course students should

1) describe the broad history of the veterinary profession and how it has shaped the profession today
2) define schools of ethical philosophy and give examples of behaviour which demonstrate these schools of thought.
3) analyse professional problems in terms of ethics and legislation pertaining to the veterinary profession
4) assign roles to the various professional organisations
5) describe the role of veterinary profession in global health issues including food safety
6) demonstrate an understanding of the importance of communication in client and interprofessional interactions

Teaching
By lectures, seminars, computer aided learning, discussion groups and supervisions.

Assessment

The knowledge component of the course will be examined by an MCQ examination at the end of Lent term.

Part IB – Biology of Disease (BOD)
(Tripos and 2nd Vet MB)

This course is run by the Department of Pathology.

Aims

1) to describe the mechanisms underlying disease processes in terms of molecular and cellular biology and deviation from normal physiology;
2) to convey an understanding of the natural history and dynamic nature of disease.

Learning Objectives

By the end of this course of lectures and practicals students should be able to:

1) demonstrate knowledge and understanding of the cellular response to injury;
2) demonstrate knowledge and understanding of the processes of innate and adaptive immunity, including appropriate and inappropriate immune responses;
3) demonstrate knowledge and understanding of the basic structure of viruses, bacteria, parasites; how these pathogens evade host defences and cause disease; and the principles underlying the transmission, epidemiology and control of infectious disease;
4) demonstrate knowledge and understanding of the processes responsible for the deregulation of cellular growth and differentiation, and the manifestations and effects of this in the genesis and growth of tumours;
5) demonstrate knowledge and understanding of the processes whereby normal blood circulation may be disrupted through pathology in blood vessel walls, disorders of haemostasis, or otherwise altered cardio-vascular physiology, and the ensuing processes of thrombosis, embolism, ischaemia and infarction;
6) identify and concisely describe these basic processes as manifested by altered cell tissue and organ structure;
7) demonstrate an understanding of the principles and practice of the sterile techniques, antisepsis, the handling of pathogenic viruses and bacterial pathogens;
8) demonstrate skills in the basic techniques for growth and identification of common bacterial species and the quantitative analysis of viral infection and growth;
9) demonstrate familiarity with the use of antibody/antigen based basic immunological assays, including those used for the detection of current or past infection, or the analysis of biological samples; and
10) solve simple problems that require interpretation of the manifestations of disease at the levels of clinical manifestation and molecular, cellular and tissue dysfunction.

Teaching and Learning methods

Lectures, practicals and supervisions

Assessment

MCQ, essay and practical/data handling papers.

Part IB - Veterinary Reproductive Biology (VRB)
(Tripos and 2nd Vet MB)

This course is run by the Department of Physiology, Development and Neuroscience

Aims

To provide students with a basic understanding of
1) the biology of mammalian reproduction and lactation.
2) the transition from intra - to extrauterine life.
3) how to apply this knowledge to clinical situations.

Learning Objectives

By the end of the course of lectures and practicals, students should understand:

1) The properties, and biological actions of the reproductive hormones.
2) How the two sexes are generated and mature.
3) How the ovarian cycles are regulated in different species.
4) The potential influence of external factors such as light, nutrition, touch on male and female fertility.
5) How mature male and female gametes are formed, come together and generate a conception.
6) How the conception develops, signals its presence to the mother and establishes a pregnancy.
7) How the placenta is formed and functions.
8) How pregnancy is maintained successfully through to parturition.
9) How the fetus grows and develops in utero.
10) What adaptations the mother makes to accommodate the growing fetus.
11) How labour and delivery are initiated and controlled.
12) The processes of neonatal adaptation to extrauterine life.
13) How the newborn animal is nurtured.
14) The main types of reproductive losses and neonatal viability and their causes.
15) The methods by which reproduction can be manipulated in animals and some specialist genetics topics.

Teaching

Lectures, supervisions and practicals

Assessment

MCQs and essay paper

Part IB Neurobiology and Animal Behaviour (NAB)
(Tripos, 2nd Vet MB)

This course is run by the Department Physiology, Development and Neuroscience

Aims

1) to provide a broad-based course on the structure and function of the central nervous system;
2) to provide students with a clear understanding of the basic principles of neurobiology
3) to enable students to understand the basis for common neurological and behavioural problems.

Objectives

1) to introduce the scientific concepts underlying the study of the central nervous system;
2) to provide students with an understanding of the principles underlying sensory, motor, motivational and cognitive processes, and how these contribute to behaviour;
3) to understand the functional and behavioural consequences of disorders
4) of the nervous system, and how they might be influenced by drugs;
5) to provide core knowledge relevant to a career in veterinary medicine.

Teaching

Lectures, supervisions and practicals

Assessment

Short notes, written practical and essay paper

Part IB – Mechanisms of Drug Action (MODA)
(Tripos, 2nd Vet MB)

This course is run by the Department of Pharmacology

Aims

1) in principles of drug action to support future courses in veterinary medicine which students will carry with them into their professional careers;
2) to allow students to develop their experimental and data analysis skills through a range of experiments carried out in the practical laboratories and attendance at demonstrations and supervisions.

Learning Outcomes

At the end of the course each student is expected to be able to:

1) demonstrate a broad knowledge of modern pharmacology, from the molecular basis of receptors, to the effect of drugs on whole body systems;
2) identify the major classes of drug receptors and sites of drug action within the body;
3) identify typical examples of drugs which are used to restore physiological functions in the cardiovascular, renal, respiratory, digestive and peripheral/central nervous systems;
4) demonstrate an understanding of the use of drugs to control inflammation and immune response or to kill bacteria, viruses, or malignant cells;
5) apply the basic principles that concern the absorption, distribution and elimination of drugs to predict the time course of drug concentrations in the body.

Teaching

Lectures, supervisions and practicals

Assessment

Essays, SBA and data handling and analysis

Part IB Comparative Vertebrate Biology (CVB) (2nd Vet MB/Tripos)

This course is run by the Department of Physiology, Development and Neuroscience.

Aims

1) to complete the systematic biology covered in the Veterinary Anatomy and Physiology core course with essential biology of the mammalian head;
2) to provide an overview of the anatomy, and some physiology, of birds of veterinary importance;
3) to present introductions to the remaining vertebrate classes of fish, amphibia, reptiles and some of the more exotic domestic animals such as elephant, camels and llamas.

Objectives

1) to introduce the study of pain from a cellular and molecular, systems and clinical point of view;
2) to stimulate interest in the topic and to encourage discussion in class;
3) to encourage students to pursue their reading and thinking to a level beyond that covered in the lectures;
4) to emphasise that our knowledge is not complete, and to point out some of the major gaps which it is hoped that some of those in the audience may be stimulated to fill in future scientific investigations.

Teaching and Learning methods

Lectures, practicals (including live anatomy) and supervisions.

Assessment

Short notes, steeplechase practical and essays.