UNIVERSITY COLLEGE DUBLIN

NATIONAL UNIVERSITY OF IRELAND, DUBLIN

VETERINARY MEDICINE

SESSION 2000/2001

DATES OF TERMS FOR MVB COURSE

SESSION 2000/2001

Semester 1:	Lecture Term	18 September - 08 December
(Michaelmas Term)	Revision	09 December - 15 December
	Examinations	16 December - 23 December
Semester 2:	Hilary Lecture	
(Hilary/Trinity Terms)	Term	08 January - 03 March
	Break	05 March - 23 March
	Trinity Lecture	
	Term	26 March - 20 April
	Revision	23 April - 28 April
	Examinations	01 May

Easter Sunday: 15 April 2001

Timetables
Timetables of lectures, practicals, tutorials etc. will be available at the commencement of the session from the departmental offices.

CONTENTS

POSTGRADUATE DEGREES AND DIPLOMA

DEGREE OF BACHELOR OF VETERINARY MEDICINE (MVB)

GENERAL INFORMATION

1. This degree enables the holder to be registered on the Register of the Veterinary Council. Only persons so registered are entitled to practise as veterinary surgeons in the Republic of Ireland. Holders of this degree, provided they are EU nationals, are also, under the EU Directives, entitled to register and practise in the United Kingdom and in all other EU countries.

2. The programme of study for the degree extends over a period of five years. Courses are taken at University College, Belfield; at the Faculty of Veterinary Medicine, Ballsbridge, Dublin 4; and at the University farm at Lyons Estate, Newcastle, Co. Dublin.

3. The number of new entrants to the First Veterinary Medicine Year will be limited. As the number of applicants far exceeds the number of places available, places are offered strictly on the basis of academic achievement.

4. Students intending to proceed to this degree must comply with the regulations regarding entry to the University.

5. Students are required to become proficient in the handling and management of a variety of animal species and are allocated an appropriate programme of farm and companion animal experience up to a maximum of ten weeks, following interview. This experience should be obtained between the Christmas vacation of the second veterinary year and the end of the Easter break of the third veterinary year. Students are designated a staff supervisor who approves the farms or animal facilities proposed. The completion of this requirement to the satisfaction of the student's supervisor is a prerequisite for sitting the Animal Husbandry and Production II examination.

6. Students are required to have passed the University Examinations in full before being permitted to proceed to the courses of the following year. The University Examinations will be held in the Summer and Supplemental Examinations will be held in the Autumn for those students who fail in the Summer and for those students who have special permission from the President. Students who fail a Supplemental Examination will be interviewed by the Faculty's Student Progress Committee.

7. Each University Examination must be passed within two years of the date of entry to the course for that examination. Students who obtain a pass mark in the First Veterinary Medicine Examination in one subject in the Summer will be exempt from further examination in that subject in the Autumn examination of the same year. Students who fail in either subject in the First Veterinary Medicine Examination must

present in both subjects at the next attempt. A candidate who fails with less than 40% in both subjects in the Autumn examination will be excluded from the course.

In the Second, Third and Fourth Veterinary Examination, a candidate who obtains a pass mark in a subject or subjects will be exempt from further examination in that subject or subjects, provided that a minimum of 40% is attained in each of the other subjects.

Students who pass in any subject or subjects of the Final Veterinary Examination will be exempted in that subject or subjects, the exemption to hold for a period of two years.

Students who fail a subject in the Final Veterinary Examination in the Summer may be required to attend the University Veterinary Hospital prior to taking that examination in the Autumn of that year.

In special circumstances, i.e. on the grounds of ill health or for some other grave reason, the Faculty may recommend the extension of the one-year rule and of the two-year rule.

8. Students who do not pass one or more subjects of the University Examinations may be required to re-attend courses before being permitted to present for the examination in the following Summer.

9. (i) Before sitting for the Final Veterinary Medicine Examination, the candidate must produce a certificate or certificates showing that he/she has spent a minimum of 24 weeks' *Seeing Practice*, preferably commencing at the Easter vacation of his/her third year.

(ii) At the beginning of the second semester, the candidate must produce a certificate or certificates showing that he/she has spent a minimum of 20 weeks' *Seeing Practice*.

(iii) The student is required to obtain experience in each of the following types of practice, all of which shall count towards the mandatory period:
(a) Farm Animal Practice - 5 weeks minimum;*
(b) Small Animal Practice - 5 weeks minimum;*
(c) Equine Practice - 3 weeks minimum.*

* It is recommended that the student gain experience in a number of practices. The practices selected should deal predominantly with the species indicated in *(a)*, *(b)* and *(c)*.

(iv) The student is encouraged to gain experience in a veterinary investigation centre or an approved laboratory. Up to four weeks will count towards the mandatory *Seeing Practice* period.

(v) Attendance at the University hospital/clinic will count for two weeks of the *Seeing Practice* period.

(vi) Holders of Training Scholarships will be allowed credit for up to nine weeks *Seeing Practice* for time spent at an approved centre.

(vii) As part of *Seeing Practice*, the student shall be required to spend two weeks at export meat plants following the completion of the fourth year.

(viii) During the mandatory period of *Seeing Practice*, the student must keep a diary which will provide information on cases seen. The student shall be required to obtain certificates from veterinary practitioners or in the case of export meat plants from a Veterinary Inspector of the Department of Agriculture, Food and Forestry to cover the minimum period.

10. Students are required to attend their practicals and clinics. Failure to do so without satisfactory explanation to the Head of the Department will be notified to the Registrar. A student whose attendance, after formal warning by the Registrar, continues to be unsatisfactory, may be debarred by the Academic Council from presenting for examination.

EXAMINATION SUBJECTS

First University Examination in Veterinary Medicine

VAN	1010	Veterinary Anatomy I (including Histology and Embryology)
VPB	1020	Veterinary Physiology and Biochemistry I (including Chemistry, Applied Biophysics and Molecular and Cell Biology)

Second University Examination in Veterinary Medicine

VAN	2010	Veterinary Anatomy II (including Histology and Embryology)
AHP	2030	Animal Husbandry and Production I
VPB	2020	Veterinary Physiology and Biochemistry II

Third University Examination in Veterinary Medicine

AHP	3030	Animal Husbandry and Production II
VMP	3010	Veterinary Microbiology
VMP	3020	Veterinary Parasitology

Fourth University Examination in Veterinary Medicine

VPY	4010	Veterinary Pathology
SACS	4020	Veterinary Pharmacology and Toxicology
LACS	4030	Large Animal Clinical Studies

MVB Degree Examination

SACS	5010	Small Animal Medicine
VSY	5020	Veterinary Surgery
LACS	5030	Large Animal Medicine
LACS	5040	Clinical Reproduction

COURSES OF INSTRUCTION FOR THE DEGREE OF MVB

FIRST YEAR

AHP 2050 Animal Husbandry and Production I
The course in Animal Husbandry and Production consists of a series of animal handling practicals carried out both at the Veterinary School and Lyons Research Farm to facilitate student learning of appropriate procedures to approach, handle, restrain and carry out routine chores on food producing, equine and companion animals. This material is examined in the latter part of the second year course.

VAN 1010 Veterinary Anatomy I (including Histology and Embryology)
The anatomy course relates the structure and development of mammalian body form to its function. The course is based around the comparative anatomy of the principal domestic species, and adopts a topographical and systematic approach. Gross anatomy practicals are based around the dissection of the dog, horse, and ruminant species. Examples of material from other species are also provided. Histology practicals cover the microscopic structure of cells and tissues. These are also structured around the major body systems. The course emphasises the anatomy of greatest clinical and pathological relevance. It includes examples of radiographic images, and brief examples of pathological conditions in which abnormalities of anatomy are found. In the first year, it comprises 3 modules:-

1. An introduction to basic anatomy (including embryology), cells, and tissues.
2. The comparative anatomy, development, and histology of the thorax and its related organs.
3. The comparative anatomy, development, and histology of the abdomen and pelvis and their related organs.

VPB 1020 Veterinary Physiology and Biochemistry I (including Chemistry, Applied Biophysics and Molecular and Cell Biology).
The Veterinary Physiology course will deal with the following: cellular functions, energy metabolism, digestion, the cardiovascular and respiratory systems in domestic animals.
The Veterinary Biochemistry course will commence with a short course in Chemistry, designed as an introduction to biochemistry. The biochemistry course will include the following topics: enzymology, the biochemistry relating to the digestion of carbohydrates, fats, proteins and with the intermediary metabolism of these compounds, the biochemistry of vitamins, minerals and water. Courses in (a) molecular & cell biology and (b) veterinary applied biophysics will be presented, integrated where appropriate, with the teaching of Veterinary Physiology & Biochemistry and Veterinary Anatomy.
Practical classes will be held in Ballsbridge and at Lyons Research Farm.

VAN 0000 Veterinary Information Technology and Computing
This course is jointly delivered by all of the pre-clinical departments with the assistance of the computing services. It is intended as a practical introduction to computing, information management, and the use of computers in presenting information. There will be seven sessions of 2 hours duration. The skills acquired in this course will be required for many aspects of learning and computer use throughout the undergraduate course.

VAN 2040 Applications and Integration
This course involves the use of cases or problems on which students work in groups. Each problem stimulates small group discussion and student research on the basic and clinical sciences relevant to that problem. The problems require an inter-disciplinary approach and the students commence the process of applying and integrating their knowledge to solve them.
The first year examination marks will be carried forward to form part of an aggregate mark for this subject in second year.

LACS 3010 Veterinary Statistics
The course in Statistics deals with the collection and analysis of data relevant to the epidemiological investigation of disease and the interpretation of biological data of veterinary relevance.

SECOND YEAR

VAN 2010 Veterinary Anatomy II (including Histology and Embryology)
Anatomy II
The course involves detailed dissection of the horse and ruminant. Comparative studies are made of the pig, sheep and fowl. Throughout the course, emphasis is placed on the functional aspects of anatomy, and where appropriate, on structures and areas of special clinical, pathological and surgical importance.

Histology II
The histology course consists of the study of the microscopic structure of the organs of domestic animals. Special emphasis is placed on the relationship between structure and function.

AHP 2030 Animal Husbandry and Production I
This course is designed to cover the basic components of animal husbandry and production. In the formal lectures and tutorials, emphasis is placed on understanding the principles of genetics, nutrition, behaviour, reproduction, welfare and husbandry methods. Laboratory practicals involve the use of various techniques in immuno and cytogenetics, reproduction

and evaluation of feeds. Practical sessions involving animals take place on the College Field Station (Lyons) and at Ballsbridge. These deal with the approach, handling and restraint of farm, companion and laboratory animals, breed identification, routine husbandry practices and shoeing of horses. Visits are made to selected livestock farms to introduce students to the management decisions that livestock producers take to optimise animal health, performance and production.

VPB 2020 Veterinary Physiology and Biochemistry II

The course in veterinary physiology will consist of a general introduction (i) to systemic physiology with emphasis on special developments encountered in animals of veterinary importance and on features basic to animal husbandry and clinical subjects; and (ii) to whole animal physiology in relation to energy metabolism and nutrition, to the environment and to meat, milk and egg production.

The course in veterinary biochemistry will be integrated with that of physiology (where appropriate). It will consist of a general introduction to the composition and properties of body fluids; and the roles and metabolism of vitamins, minerals and water. Emphasis will be given to special mechanisms in animals of veterinary importance and to features basic to animal husbandry and clinical subjects.

THIRD YEAR

AHP 3030 Animal Husbandry and Production II

This course consists of lectures, tutorials, laboratory and companion animal practical classes given at Ballsbridge and farm animal practicals which take place at the College's Field Station at Lyons. The aim of the course is to give the student current practical knowledge and recommendations on how to feed, breed, house and manage farm and companion animals. Topics covered in lectures include beef, dairy, sheep, goat and poultry production, and practical aspects of the husbandry of companion animals. Alternative farming systems are also covered as are economics and welfare implications of the management of all species. Laboratory sessions deal with the use of modern diagnostic techniques in genetics, nutrition, reproduction and dairy technology to help solve practical problems at farm level. Animal practicals involve assessing production systems, determination of reproductive status of farm animals, assessment of milking machine efficiency and investigating the behaviour, care and welfare of farm and companion animals. Visits are made to specific farms to help the student evaluate the efficiency of production systems, determine their strengths and weaknesses and make practical recommendations on how to improve efficiency.

VMP 3010 Veterinary Microbiology I

The course deals with microorganisms pathogenic for animals, the diseases they produce and their public health significance. The course comprises lectures and practical classes extending over two semesters.

The lecture course covers the following topics:

- General principles of veterinary bacteriology, mycology and virology.
- Principles of veterinary immunology.
- Infectious diseases of animals caused by bacteria, including chlamydiae and rickettsiae, mycoplasmas, fungi, viruses and prions.
- For each infectious disease, emphasis is placed on its aetiology, epidemiology, pathogenesis, clinical signs, diagnosis and control.
- Zoonotic diseases.

Students carry out practical procedures relevant to veterinary microbiology:

- *Bacteriology:* microscopy, culture, use of biochemical tests for identification, sterilization and disinfection, antibiotic susceptibility testing.
- *Mycology:* microscopy, culture, identification.
- *Virology:* electron microscopy, tissue culture, egg inoculation.
- *Immunology:* serological tests and their interpretation, vaccines and vaccination.

Applied aspects of veterinary microbiology are dealt with in Fourth Year.

VMP 3020 Veterinary Parasitology I

The aim of the course is to enable students to acquire an understanding of parasitic diseases of animals and their public health significance. Lectures, seminars and tutorials over two semesters deal with diseases caused by helminths, arthropods and protozoa.

- The epidemiology, together with pathogenesis, economic importance, diagnosis and control of parasitic diseases are presented.
- In practical classes, students carry out routine laboratory diagnostic techniques and learn to recognize parasites of clinical importance.
- In tutorials, small groups of students are encouraged to consider contemporary problems in parasitology and to discuss them in an independent and critical manner.
- Individual students are assigned a project on which they make a presentation to the seminar group.

Applied aspects of veterinary parasitology are dealt with in Fourth Year.

VPY 4010 Veterinary Pathology I
This course extends over two terms and encompasses general pathology in companion and farm animals. Lectures are supplemented by practical classes and demonstrations in gross, microscopic and clinical pathology. The course is designed to give the student a thorough understanding of disease mechanisms.

- Introduction to Clinical Procedures
The course in clinical methodology consists of practical classes and tutorials in which the students are introduced to selected clinical procedures used in the diagnosis of disease in animals, and in clinical reproduction.

The course is presented jointly by the Department of Small Animal Clinical Studies, the Department of Large Animal Clinical Studies and the Department of Veterinary Surgery.

FOURTH YEAR

VPY 4010 Veterinary Pathology II
An integrated course in systemic and clinical pathology is given over the three terms of the Fourth Year. Lectures and laboratory practicals are supplemented by tutorials and demonstrations. Morphological and pathophysiological aspects of disease are related to clinical findings. The course is closely co-ordinated with the diagnostic service provided by the Department of Veterinary Pathology.

Practical instruction in laboratory medicine demonstrates clinical laboratory techniques applied to specimens submitted from animal patients. Results are interpreted and discussed.

VMP 0000 Veterinary Microbiology II
This course deals with the laboratory diagnosis and some applied aspects of the treatment, prevention and control of bacterial, mycotic, viral and prion diseases of domesticated animals.

VMP 0000 Veterinary Parasitology II
This course deals with the laboratory diagnosis and some applied aspects of the treatment, control and prevention of parasitic diseases in domesticated animals.

SACS 4020 Veterinary Pharmacology and Toxicology

The course is designed to present those aspects of the various drugs sciences of most relevance to veterinary needs. It is presented in the following sequence via lectures, seminars, tutorial demonstrations and practical sessions.

1. The basic pharmacology of how drugs act, how their actions are measured, how they reach their sites of action and how they are regulated by law.
2. Systematic pharmacology deals with drugs according to the body system or function on which they have their greatest effect.
3. Chemotherapeutics describes drugs used in the management of infectious diseases of all types.
4. Toxicology addresses the undesirable actions of drugs and other chemicals and describes the treatment of poisoning.

LACS 4030 Large Animal Clinical Studies I

The course in Large Animal Clinical Studies given in the Fourth Year consists of lectures, tutorials and practical classes on: (i) clinical methodology, (ii) clinical reproduction, (iii) poultry medicine, (iv) food hygiene and safety, (v) veterinary public health, and (vi) epidemiology and population medicine.

Students attend practical clinical sessions in the Veterinary Teaching Hospital. Clinical training is also provided on co-operating farms where disease problems are investigated both as individual cases and as herd or flock problems. Supervised visits are made to premises engaged in the production of foods of animal origin.

SACS 5010 Small Animal Clinical Studies I

This course consists of lectures and tutorials in medicine of the different body systems with emphasis on pathophysiology, clinical signs of organ dysfunction, diagnostic methods, diagnosis and principles of treatment of diseases of companion animals (dogs, cats, birds and others). Lectures are also given in clinical nutrition, infectious diseases and behaviour.

VSY 5020 Veterinary Surgery I

Lectures are given in the principles of surgery, introduction to veterinary anaesthesia, introduction to diagnostic imaging and elements of systematic surgery in small and large animals. There are seminars in anaesthesia and radiology and a series of clinical presentations. There is a series of practical classes in aseptic surgical technique.

Clinical instruction is given in the clinic and hospital. In the Fourth and Fifth Year, students are on rota to attend the clinic and hospital at weekends during term.

FIFTH YEAR

SACS 5010 Small Animal Clinical Studies II
The lectures in the second year of Small Animal Clinical Studies consist of problem orientated lectures in small animal medicine. In addition, there are lectures in clinical nutrition, oncology, toxicology, geriatric and paediatric medicine. Students are supervised in small groups in the clinic and hospital where they have responsibility for the care and welfare of hospital patients. Students are rostered for out of hours and emergency care during term time.

LACS 5030 Large Animal Clinical Studies II
Lectures, tutorials and practicals are given on (i) the diagnosis, treatment and prevention of diseases of cattle, sheep, horses, pigs, goats and deer; (ii) clinical reproduction in all species of domestic animals; (iii) herd and flock medicine; (iv) state medicine; (v) jurisprudence and ethics; and (vi) practice management. There are daily clinical sessions which students attend on a rota basis in small groups for instruction in the diagnosis, treatment and prevention of diseases in large animals. Clinical sessions take place in the Veterinary Teaching Hospital as well as on co-operating farms and in a farm animal practice.

VSY 5020 Veterinary Surgery II
The course of lectures covers all the body systems in small and large animals and diagnostic imaging and veterinary anaesthesia. Teaching in case management, aseptic technique and operating room procedure, diagnostic imaging and veterinary anaesthesia is given within the Veterinary Teaching Hospital where students assist on rotation in veterinary anaesthesia, veterinary diagnostic imaging, large animal surgery and small animal surgery. Training is supplemented by seminars and practical classes. Rostered patient care before and after classes and on weekends forms part of the learning experience.

POSTGRADUATE DEGREES AND DIPLOMA

DEGREE OF MASTER OF ANIMAL SCIENCE

DEGREE OF MASTER OF SCIENCE

DEGREE OF MASTER OF VETERINARY MEDICINE

DEGREE OF DOCTOR OF PHILOSOPHY

DEGREE OF MASTER OF EQUINE STUDIES

HIGHER DIPLOMA IN EQUINE STUDIES

POSTGRADUATE STUDY AND RESEARCH

Candidates for the degrees of MVM, MAnSc, MSc, PhD shall fulfil the University regulations and requirements regarding these degrees.

Application Procedure
The application of a candidate shall be submitted for approval, through the Dean, to the Faculty of Veterinary Medicine, by the Professor or full-time statutory academic staff member with the approval of the relevant Professor, under whose direction the student is to work.

The application shall be submitted in writing to the Dean and shall be circulated to the Faculty prior to the meeting at which the application is presented for acceptance. The application shall provide information regarding:

(a) The candidate's academic qualifications and fitness to undertake postgraduate studies;
(b) The proposed research project and course of study;
(c) The availability of facilities for the proposed research;
(d) The name(s) of the supervisor(s).

Candidates from outside Ireland and Great Britain will be required to provide evidence of a satisfactory standard in English.

The names of the proposed extern examiners shall be submitted in writing to the Dean and shall be circulated, in advance, to the Faculty prior to the meeting at which the names are presented.

DEGREE OF MASTER OF ANIMAL SCIENCE (MAnSc)

Admission Requirements
A candidate for the MAnSc degree, in the Faculty of Veterinary Medicine, would normally be a holder of a primary degree with First or Second Class Honours in a subject of relevance to veterinary medicine and shall present such evidence in this regard as will satisfy the Faculty.

Course Regulations
Candidates shall carry on research for a minimum period of three terms and shall take such courses as may be prescribed by the Faculty. Nine terms are allowed in which to complete the degree from the date of acceptance. Candidates who have not completed the degree within that period must re-apply to the Faculty. Candidates shall be required to take an oral examination on the subject matter of their thesis unless exempted by the examiners.

DEGREE OF MASTER OF SCIENCE (MSc)

Admission Requirements
A candidate for the MSc degree must have at least a Second Class Honours primary degree or equivalent.

Course Regulations
The degree of Master of Science may be awarded by thesis. Candidates shall carry out research for a minimum period of three terms. Nine terms are allowed in which to complete the degree from the date of acceptance. Candidates may be required to pass an examination on the subject matter of the thesis if the examiners so decide.

DEGREE OF MASTER OF VETERINARY MEDICINE (MVM)

Admission Requirements
Holders of a degree in veterinary medicine, registerable with the Veterinary Council, shall be eligible to obtain the Degree of Master of Veterinary Medicine (MVM). The Faculty may, at its discretion, recommend that the holder of a degree in Veterinary Medicine, not registerable with the Veterinary Council, be deemed eligible to obtain the Degree of MVM.

Course Regulations
Candidates for the MVM degree shall carry on research for a minimum period of three terms. Nine terms are allowed in which to complete the degree from the date of acceptance. Candidates who have not completed the degree within that period must re-apply to the Faculty. Candidates shall be required to take an oral examination on the subject matter of their thesis unless exempted by the examiners.

DEGREE OF DOCTOR OF PHILOSOPHY (PhD)

A candidate for the PhD degree in the Faculty of Veterinary Medicine shall possess a degree in veterinary medicine or other appropriate qualification and shall present such evidence in this regard as will satisfy the Faculty.

Candidates shall carry on research for a minimum period of nine terms or six terms in the case of any candidate whose attainments, in the opinion of the Faculty, justify such shorter course.

Candidates are allowed six years in which to complete the degree from the date of acceptance, and if they have not done so within that period, they must re-apply to the Faculty.

Candidates shall be required to take an oral examination on the subject matter of their thesis unless exempted by the examiners.

DEGREE OF MASTER OF EQUINE STUDIES AND HIGHER DIPLOMA IN EQUINE STUDIES

A postgraduate course in Equine Studies is offered jointly by the Faculties of Agriculture and Veterinary Medicine. This course of study leads to a Master's Degree in Equine Studies (Mode II) or a Higher Diploma in Equine Studies.

Candidates must have a primary degree in a biological area and adequate experience with horses. Applicants may be requested, at the discretion of the Course Management Committee, to attend for interview prior to acceptance. The duration of the course will be one academic year followed, in the case of Master's Degree students, by a project period of at least four months.

The course will consist of lectures, tutorials and practical instruction in the following topics relating to equines:

Anatomy, physiology, breeding and genetics, nutrition and feeding management, reproduction and breeding management, grassland management, soil science, health and disease, agribusiness, behaviour/welfare, hoof care, organisation, management and economics of horse production.

Applications should be submitted to the Director - Equine Studies Programme, University College Dublin, Belfield, Dublin 4.