

# Veterinary Science - VMB (VMB)

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## **VMB 900 Veterinary Pain: Physiology and Clinical Problem Solving** (1 credit hours)

Course will review the neuroanatomy and physiology of pain with emphasis on veterinary species. The course will also cover clinical treatment options and ethical discussions.

*Typically offered in Fall only*

## **VMB 901 Molecular Medicine** (1 credit hours)

This elective is designed for all DVM students to augment their training in clinical and basic sciences. Modern medicine is making increasing use of molecular approaches for advancing diagnostic and prognostic modalities, and for developing more effective therapeutic strategies for cancer, metabolic disorders and infectious diseases. This class will outline the concepts underlying current and emerging technologies in molecular medicine, and investigate their utility in a clinical setting. The goal is to equip students with a basic understanding of the appropriate and effective use of molecular strategies, whether directly for patient care, or within academic, industry or government research.

*Typically offered in Spring only*

## **VMB 909 Case Based Radiographic Interpretation** (1 credit hours)

Using an entirely case based approach, disorders that are commonly diagnosed radiographically in both small and large animals will be discussed. The emphasis will be on radiographic interpretation. Important concepts in radiographic interpretation and how imaging can affect patient management will be discussed.

*Typically offered in Spring only*

## **VMB 911 Veterinary Anatomy I** (5 credit hours)

Gross anatomy of the dog and cat. Neuroanatomy of the dog and cat. Dissection of embalmed (dog/cat) cadavers, study of prosections, slides, models, and imaging modalities.

P: Admission to professional veterinary program

*Typically offered in Fall only*

## **VMB 912 Introduction to Clinical Problem Solving in Veterinary Practice** (2 credit hours)

A combination of lectures and in-class activities will be used to explore the clinical reasoning process and steps used in "working up" a veterinary clinical case. Specific topics include: patient signalment, chief complaint, history, physical exam, problem list, differential diagnosis. Also covered: introductory clinical skills, medical records (SOAP). Course limited to students enrolled in the DVM curriculum.

*Typically offered in Fall only*

## **VMB 913 Veterinary Physiology and Microanatomy I** (5 credit hours)

First course in a two course series on veterinary physiology and microanatomy. Emphasis will be on structure and function which will provide a foundation upcoming courses (e.g. pharmacology, pathology, medicine).

P: Admission to professional veterinary program

*Typically offered in Fall only*

## **VMB 914 Histology and Cytology** (2 credit hours)

This course focuses on the study of cells, basic tissues, and selected organs of domestic animals. The primary emphasis is on the molecular and structural basis for cell function, tissue organization, and organ systems.

P: Admission to professional veterinary program

*Typically offered in Fall only*

## **VMB 920 Small Group Problem Solving in Veterinary Medicine** (1 credit hours)

Students will work in small groups with a faculty facilitator to examine case scenarios, and apply the problem-solving process discussed in VMB 912 to a variety of clinical and research problems. This course will provide a venue for integration of content presented in other courses, as well as application of small-group communication skills. Course limited to students enrolled in the DVM curriculum.

*Typically offered in Spring only*

## **VMB 921 Veterinary Comparative Anatomy** (4 credit hours)

Gross anatomy of domestic ungulates (horse, ox, goat, pig). Involves dissection of embalmed specimens and study of prosections, models, and radiographs.

*Typically offered in Spring only*

## **VMB 923 Veterinary Physiology and Microanatomy II** (4 credit hours)

A continuation course in veterinary physiology and microanatomy. Emphasis will be on structure and function which will provide a foundation upcoming courses (e.g. pharmacology, pathology, medicine).

*Typically offered in Spring only*

## **VMB 930 Anesthesiology** (2 credit hours)

Anesthetic principles, agents, and techniques of multiple species.

*Typically offered in Fall only*

## **VMB 931 Veterinary Ethics and Animal Welfare** (2 credit hours)

This course will explore the major ethical issues confronting the practices of veterinary medicine, biomedical science, and animal welfare. Students will become familiar with legal and institutional positions, consider and debate opposing arguments on the various topics, and examine relevant case studies. Provides the basic leadership and operational training necessary to become a Credentialed responder for the State of North Carolina. Limited to DVM students or by permission of instructor.

*Typically offered in Fall only*

## **VMB 932 Veterinary Medical Decision Making** (1 credit hours)

A combination of lectures and Moodle activities will be used to explore the medical decision-making process in veterinary medicine and error prevention strategies. Main course themes are errors in: knowledge acquisition, data gathering, data processing and metacognition. Discussion of generation, refinement and testing of diagnostic hypotheses. Course limited to students enrolled in the DVM curriculum.

*Typically offered in Fall only*

**VMB 933 Veterinary Pharmacology I** (3 credit hours)

This course focuses on the action of drugs in animals and basic principles of drug disposition and pharmacokinetics. The course will provide presentations on the principles of pharmacology of medications used in animals. Principles of autonomic pharmacology will form a foundation that is important to other drug groups. Important drug groups discussed during the course will be sympathetic and parasympathetic agonists and antagonists, anesthetic, sedative, and tranquilizer drugs. We will then cover medications used to treat conditions of the brain and behavior, hemostatic, endocrine, and respiratory systems. The material you learn in this semester will be building blocks for additional systems therapeutics in the Spring semester (VMB 943). This course will consist of recorded lecture material, case presentations, in-class activities/discussions, individual and group assignments, and presentations by guest lecturers.

*Typically offered in Fall only*

**VMB 936 Introduction to Radiology** (1 credit hours)

This course describes and explains the principles of physics of diagnostic radiology and ultrasound, and the basics of image interpretation. Principles of thoracic radiography and radiographic anatomy will be covered. Radiographic interpretation of the cardiovascular system, lungs and airways and pleural space are discussed and related to physiology of the different organ systems. Principles of abdominal radiography and radiographic anatomy will be covered as well and the concepts of peritoneal detail, abdominal mass effect and intestinal ileus will be introduced.

*Typically offered in Fall only*

**VMB 943 Veterinary Pharmacology II** (3 credit hours)

A course in veterinary pharmacology with emphasis on the pharmacology of drugs affecting various body systems including digestive, endocrine, ocular, respiratory, central nervous, cardiovascular, or musculoskeletal. Drugs that produce analgesic and anti-inflammatory properties also are included.

*Typically offered in Spring only*

**VMB 944 Veterinary Toxicology and Poisonous Plants** (2 credit hours)

Toxicological basis and pathological features of diseases of animals and birds caused by common toxic chemicals and plants with emphasis on clinical manifestations, diagnosis, prevention, and treatment.

*Typically offered in Spring only*

**VMB 952 Specialized Problem Solving in Veterinary Medicine** (1 credit hours)

Specialized Problem-Solving is the fourth in a series of courses focusing on Clinical Reasoning and Problem Solving. In this class, you will build upon the skills developed in earlier courses, and work to diagnose, treat and trouble-shoot more complex cases. These cases may have external constraints that will limit your ability to order diagnostic tests, and/or may require identification and correction of medical errors. You will work in unsupervised teams, and then present the results of your decision-making processes to a facilitator for discussion, review and critique. Course limited to students enrolled in the DVM curriculum.

*Typically offered in Fall only*

**VMB 960 Veterinary Radiology and Radiobiology** (2 credit hours)

Fundamentals of radiographic diagnosis. The VMB 960 course is focused on the diagnostic imaging appearance of small and large animal thoracic, abdominal, musculoskeletal and neurologic disease. The main imaging modality that will be covered is diagnostic radiology and some diagnostic ultrasound but Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) will be introduced as well. The principles of image interpretation will be revisited and the imaging appearance of important and common diseases will be presented and discussed. Case examples will be shown and students may be asked to provide case interpretation in class.

*Typically offered in Spring only*

**VMB 961 Success in the Clinics and Beyond** (1 credit hours)

This course provides an opportunity for students to integrate and synthesize professional skills in preparation for clinical rotations and veterinary practice. An introduction to the current VH electronic medical record system will be provided. Students will apply their knowledge of clinical communication, teamwork, clinical reasoning, and ethics to a variety of case scenarios.

*Typically offered in Spring only*

**VMB 962 Clinician Scientist Research Experience** (1-10 credit hours)

This course is designed to give students an opportunity to take part in research in the laboratory of their chosen mentor(s), resulting in a greater understanding of the research process. Students will be specifically required to complete at least three 2-week blocks, and to have at least two of these blocks scheduled consecutively (i.e., a 1-month time period in the laboratory). This course is restricted to students enrolled in the Clinician Scientist Focus Area of the DVM curriculum and requires approval by the student's CSFA mentor.

Prerequisite: All freshman-junior DVM courses allowing the student to enroll in senior DVM courses.

*Typically offered in Fall and Spring*

**VMB 965 Veterinary Nutritional Health** (2 credit hours)

The role of nutrition in veterinary medicine. Development, diagnosis and prevention of nutritional problems in a variety of species will be discussed, frequently employing a comparative approach.

*Typically offered in Spring only*

**VMB 976 Radiology Rotation** (2 credit hours)

This rotation will provide practical training in the production of quality radiographic examinations and will help develop interpretation skills in diagnostic radiology. Students are expected to be familiar with material covered in the junior radiology course (VMB 960) as it will be incorporated into this rotation. Review of the auto-tutorial teaching cases, located in the "Star Wars" room. The radiology rotation is oriented toward teaching and service. Learning experiences result from a combination of direct contact with the faculty, residents, technicians, and classmates. You will make diagnostic quality radiographs, participate in morning rounds and review didactic material, VMB 960 teaching files and ask questions.

**VMB 977 Clinical Anesthesia Rotation** (2 credit hours)

Students engage in the daily clinical service responsibilities of the CVM-VTH Anesthesia Section in the role of anesthetists assigned to the care of client-owned animals. The objective of this clinical course is to enable each student to achieve their maximum potential as neophyte anesthetists having limited experience. Student activities are supervised and conducted by CVM faculty anesthesiologists, and VTH staff anesthesia technicians. Supporting activities related to delivering clinical service include attending clinical rounds and case discussions, and oral presentation of a critical review of a recently published research paper relevant to anesthesia and its supporting basic sciences.

*Typically offered in Fall and Spring*

**VMB 978 Clinical Behavior & Nutrition** (2 credit hours)

This 4th year clinical rotation will provide interested students with the opportunity to gain experience in both behavior and nutrition. During the week spent at the Animal Behavior Service, students will participate in the diagnosis and treatment of behavior problems in companion animals. During the week spent at the Nutrition Service, students will develop and initiate Nutrition Support plans for hospitalized and health companion animals. Relevant nutrition support skills will be practiced. This course is restricted to students in the DVM curriculum.

Prerequisite: VMC 927 or equivalent, DVM Curriculum Student Status

*Typically offered in Fall and Spring*

**VMB 991 SP Top in MBS** (1-2 credit hours)

One week special topic course in the Department of Molecular Biomedical Sciences.

**VMB 992 SP Top in MBS** (2 credit hours)

Two week special topic course in the Department of Molecular Biomedical Sciences.