

VETERINARY BIOMEDICAL SCIENCES (VBSC)

VBSC 5000 Master's Research and Thesis

Prerequisites: Graduate standing.

Description: Research problem for meeting requirements of the Masters degree. Previously offered as VAPP 5000. Offered for variable credit, 1-6 credit hours, maximum of 6 credit hours.

Credit hours: 1-6

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 5010 Professional Skills for Biomedical Sciences

Prerequisites: Graduate student standing; consent of instructor.

Description: Acquiring skills that are usually not taught in other courses but are essential to be successful in the graduate program as well as in a career in science. Writing and publishing a scientific paper, writing a successful grant proposal, preparing effective oral and poster presentations, and understanding professional ethics in the conduct of scientific research. Offered for variable credit, 1-3 credit hours, maximum of 3 credit hours.

Credit hours: 1-3

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 5013 Veterinary Biomedical Sciences I

Prerequisites: Graduate standing and consent of instructor.

Description: The course is designed to provide a comprehensive understanding of cellular and molecular biology including protein and DNA structure and function, gene regulation, membrane function and traffic, mitochondria, cytoskeleton, cell communication, cell cycle, cell death, and cell junctions, adhesion and extracellular matrix as well as other relevant topics.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5023 Veterinary Biomedical Sciences II

Prerequisites: VMED 5013 or permission of the department.

Description: Integrated applied biology and pathobiology of hosts and pathogens of veterinary interest including infectious disease processes; hemodynamic, inflammatory, immune and tissue repair responses; genetic, environmental, nutritional, and neoplastic disorders; and aging.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5103 Biochemical Toxicology

Prerequisites: Consent of instructor.

Description: In-depth overview of biochemical and molecular mechanisms of interactions between exogenous chemicals and living systems. Transport, distribution, elimination and alteration of exogenous chemicals within the body and mechanisms whereby exogenous chemicals disrupt biochemical processes critical for cell/organ/organismal integrity and function. Same course as ITOX 5103.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5110 Special Problems

Prerequisites: Graduate standing and consent of instructor.

Description: Special research problems in the various fields of veterinary biomedical sciences. Previously offered as VIDP 5110. Offered for variable credit, 1-6 credit hours, maximum of 20 credit hours.

Credit hours: 1-6

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 5120 Current Topics in Veterinary and Biomedical Science

Prerequisites: A minimum of one undergraduate introductory course in microbiology.

Description: Development of oral presentation skills, critical thinking and deductive reasoning through the use of discussion of current literature from the field of veterinary and biomedical science as it pertains to the study of infectious disease in humans and animals. Previously offered as VIDP 5120. Offered for fixed credit, 1 credit hours, maximum of 4 credit hours.

Credit hours: 1

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 5123 Veterinary Histology

Prerequisites: Graduate standing and consent of instructor.

Description: Organization and structure of cells and tissues of domestic animals. Classroom/Lab Supply & Materials Fee of \$20.00 applies. Same course as VMED 7123.

Credit hours: 3

Contact hours: Lecture: 2 Lab: 2

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5134 Veterinary Physiology I

Prerequisites: Graduate standing and consent of instructor.

Description: Molecular, cellular and organ system physiology. Establishing a base of knowledge and understanding requisite to subsequent courses. Same course as VMED 7114.

Credit hours: 4

Contact hours: Lecture: 2 Lab: 4

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5143 Veterinary Physiology II

Prerequisites: Graduate standing and consent of instructor.

Description: Molecular, cellular and organ system physiology.

Establishing a base of knowledge and understanding requisite to subsequent courses. Same course as VMED 7113.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5155 Veterinary Physiology III

Prerequisites: Graduate standing and consent of instructor.

Description: Molecular, cellular and organ system physiology.

Establishing a base of knowledge and understanding requisite to subsequent courses. Same course as VMED 7235.

Credit hours: 5

Contact hours: Lecture: 5

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5202 Evaluation of Biomedical Research Data

Prerequisites: STAT 5013 or consent of instructor.

Description: Statistical analysis of biomedical data with emphasis on selection of appropriate biometrical procedures and interpretation of results rather than on computational aspects of procedures. Exploration of experimental design, data collection, and analysis within the context of biomedical investigation methodologies.

Credit hours: 2

Contact hours: Lecture: 2

Levels: Graduate

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5221 Epidemiology and Evidence-Based Medicine

Prerequisites: Graduate standing and consent of instructor.

Description: Principles and uses of evidence-based practice of veterinary medicine; comprehension and utilization of scientific research; interpretation of basic concepts of observational study of disease. Same course as VMED 7221 and MPH 5221.

Credit hours: 1

Contact hours: Lecture: 1

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5223 Veterinary Parasitology I

Prerequisites: Graduate standing and consent of instructor.

Description: Introduction to the general principles of parasitism and parasites of veterinary medical importance including taxonomy, morphology, biology of parasites, modes of transmission, host-parasite relationships, infectious processes and pathogenicity, diagnostic methods, treatment and control measures and public health importance. Classroom/Lab Supply & Materials Fee of \$30.00 applies. Same course as VMED 7223.

Credit hours: 3

Contact hours: Lecture: 2 Lab: 2

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5253 Veterinary Immunology

Prerequisites: Graduate standing and consent of instructor.

Description: Basic principles of immunology and their application to veterinary medicine. Same course as VMED 7253.

Credit hours: 3

Contact hours: Lecture: 1 Lab: 4

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5264 General Pathology

Prerequisites: Graduate standing and consent of instructor.

Description: Cellular and tissue pathology, pigments, inflammation, immunopathology, disturbances of growth and circulation, and neoplasia. Functional disturbances that accompany changes in structures as well as the causes and pathogenesis of diseases. Same course as VMED 7264.

Credit hours: 4

Contact hours: Lecture: 3 Lab: 2

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5323 Veterinary Parasitology II

Prerequisites: Graduate standing and consent of instructor.

Description: Principles of diagnostic, treatment, control and prevention of animal diseases produced by arthropod, protozoan, rickettsial, and helminth parasites. A problem-based approach to parasitic diseases affecting the integumentary, respiratory, hemic-lymphatic, reproductive, urinary, nervous/sensory, musculoskeletal, and alimentary systems with emphasis on diseases of domestic animals. Same course as VMED 7323.

Credit hours: 3

Contact hours: Lecture: 2 Lab: 2

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5333 Pharmacology I

Prerequisites: Graduate standing and consent of instructor.

Description: Introduction of the principles of pharmacodynamics, drug disposition and pharmacokinetics. Pharmacological effects, mechanisms of actions, metabolism, disposition, clinical indications and toxic effects of drugs acting on the autonomic, central nervous, cardiovascular, respiratory, and renal systems. Same course as VMED 7333.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5354 Infectious Diseases I

Prerequisites: Graduate standing and consent of instructor.

Description: Important animal diseases caused by bacteria, fungi and viruses will be covered on a system basis. Mechanisms of infectious disease processes and the relationship of such processes to disease development, diagnosis, treatment and control. The relationship of zoonotic diseases to community and environmental health as well as important zoonoses. Same course as VMED 7354. Additional flat fee of \$75.00 applies.

Credit hours: 4

Contact hours: Lecture: 2 Lab: 4

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5363 Clinical Pathology

Prerequisites: Graduate standing and consent of instructor.

Description: Basic concepts pertinent to data interpretation and laboratory methods used in evaluation of disease. Classroom/Lab Supply & Materials Fee of \$15.00 applies. Same course as VMED 7363.

Credit hours: 3

Contact hours: Lecture: 2 Lab: 2

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5404 Techniques in Parasitology

Prerequisites: Graduate standing and general parasitology; helminthology or concurrent enrollment.

Description: Experimental application of basic research and teaching techniques in helminthology and protozoology. Individual participation and analysis of experimental situations and techniques applicable to all areas of zoology. Previously offered as VIDP 5404.

Credit hours: 4

Contact hours: Lecture: 3 Lab: 2

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5413 Food Safety and Public Health

Prerequisites: Graduate standing and consent of instructor.

Description: Introduction to public health and diseases transmissible to humans. Potential human health hazards in foods of animal origin and principles of safe food production, processing, handling and inspection, including pathogen reduction and HACCP regulations. Same course as VMED 7413 and MPH 5413.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5432 Pharmacology II

Prerequisites: Graduate standing and consent of instructor.

Description: Continuation of VBSC 5333 that includes the mechanisms of action, disposition, adverse effects, and indications for groups of pharmacological agents used in veterinary medicine. Same course as VMED 7432.

Credit hours: 2

Contact hours: Lecture: 2

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5454 Infectious Diseases II

Prerequisites: Graduate standing and consent of instructor.

Description: Continuation of Infectious Diseases I (VMED 5354). Classroom/Lab Supply & Materials Fee of \$25.00 applies. Same course as VMED 7454.

Credit hours: 4

Contact hours: Lecture: 2 Lab: 4

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5482 Hemolymphatic and Oncology

Prerequisites: Graduate standing and consent of instructor.

Description: Pathogenesis, diagnosis, pathology, medical and surgical treatment and prevention of diseases related primarily to the blood and lymphatic system. (6 week module). Same course as VMED 7482.

Credit hours: 2

Contact hours: Lecture: 2

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5512 Laboratory Animal Medicine

Prerequisites: Graduate standing and consent of instructor.

Description: Introductory course focusing on the biology and major diseases of commonly used laboratory animals. (One - 3 hour lab per semester). Same course as VMED 7512.

Credit hours: 2

Contact hours: Lecture: 2 Lab: 1

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5532 Molecular Genetics

Prerequisites: Graduate standing and consent of instructor.

Description: The expression, purification, characterization, and application of biological macromolecules in therapeutics and diagnostic relevant to animal and human health. Same course as VMED 7532.

Credit hours: 2

Contact hours: Lecture: 2

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5533 Toxicology

Prerequisites: Graduate standing and consent of instructor.

Description: Diagnosis and management of intoxications involving plant, chemical, and biological toxins. (Nine week course) (Two - 2 hour labs per 9 weeks). Classroom/Lab Supply & Materials Fee of \$15.00 applies. Same course as VMED 7533.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5542 Clinical Endocrinology I

Prerequisites: Graduate standing and consent of instructor.

Description: Advanced medical endocrinology addressing diagnostic endocrinology and therapeutic endocrinology. Diagnostic endocrinology shall examine the physiological and medical basis for selecting provocative or non-provocative testing procedures as an adjunct to completing a definitive diagnosis. Therapeutic endocrinology involves the use of diagnostic endocrinology to evaluate the efficacy of medical treatment of endocrinopathies and the medical use of hormonal preparations to control animal physiology or endocrinology and non-endocrine diseases. Same course as VMED 7542.

Credit hours: 2

Contact hours: Lecture: 2

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5563 Musculoskeletal System

Prerequisites: Graduate standing and consent of instructor.
Description: Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to the musculoskeletal system. (Ten week course) (Two - 2 hour labs per 10 weeks). Same course as VMED 7563.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VBSC 5564 Alimentary System

Prerequisites: Graduate standing and consent of instructor.
Description: Pathogenesis, diagnosis, pathology, medical and surgical treatment and prevention of diseases related primarily to the alimentary system. (Fourteen week course). Same course as VMED 7564.
Credit hours: 4
Contact hours: Lecture: 4
Levels: Graduate, Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VBSC 5583 Dermatology and Endocrinology

Prerequisites: Graduate standing and consent of instructor.
Description: Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to skin and the endocrine system (nine-week model). (One - 4 hour lab per nine weeks). Same course as VMED 7583.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VBSC 5612 Clinical Neurology

Prerequisites: Graduate standing and consent of instructor.
Description: Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of nervous system diseases. (Four week course). Same course as VMED 7612.
Credit hours: 2
Contact hours: Lecture: 2
Levels: Graduate, Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VBSC 5613 Biology of Parasites

Prerequisites: Graduate standing, general parasitology, or consent of instructor.
Description: A systematic and ecologic approach to the study of parasitology. Host-parasite relationships, physiology, ecology and behavioral aspects of parasitic organisms. Previously offered as VIDP 5613.
Credit hours: 3
Contact hours: Lecture: 3
Levels: Graduate, Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VBSC 5614 Cardiopulmonary System

Prerequisites: Graduate standing and consent of instructor.
Description: Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to the cardiovascular and respiratory systems. (Nine week course) (Four - 2 hour labs per nine weeks). Same course as VMED 7614.
Credit hours: 4
Contact hours: Lecture: 2 Lab: 4
Levels: Graduate, Professional
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Dean of Veterinary Med

VBSC 5632 Exercise Physiology

Prerequisites: Graduate standing and consent of instructor.
Description: Current knowledge base pertaining to the acute and chronic adaptations to exercise in domestic animals and current techniques for the evaluation and correction of poor performance. Same course as VMED 7632.
Credit hours: 2
Contact hours: Lecture: 2
Levels: Graduate, Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VBSC 5661 Infectious and Parasitic Diseases of Wild Animals

Prerequisites: Graduate standing and consent of instructor.
Description: Systematic approach to infectious and parasitic diseases that affect wild animals. Emphasis will be placed on disease recognition in wild species, ecology of transmission, and population management implications of disease diagnosis. Same course as VMED 7661.
Credit hours: 1
Contact hours: Lecture: 1
Levels: Graduate, Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VBSC 5662 Urinary System

Prerequisites: Graduate standing and consent of instructor.
Description: Pathogenesis, diagnosis, pathology, medical and surgical treatment and prevention of diseases related primarily to the urinary system. (Three week module). Same course as VMED 7662.
Credit hours: 2
Contact hours: Lecture: 2
Levels: Graduate, Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VBSC 5671 Clinical Endocrinology II

Prerequisites: Graduate standing and consent of instructor.
Description: Advanced medical endocrinology, focusing on endocrine diseases associated with 1) dysfunction of the endocrine pancreas, 2) selected endocrinopathies of the reproductive system, and 3) therapeutic use of hormones to control reproductive activity of animals. Same course as VMED 7671.
Credit hours: 1
Contact hours: Lecture: 1
Levels: Graduate, Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VBSC 5691 A Focus on Zoonotic Diseases

Prerequisites: Graduate standing and consent of instructor.

Description: Overview of zoonotic aspects of infectious diseases, including the transmission to man, incidence and prevalence, prevention and control strategies, assessment of risk, and governmental and regulatory aspects of these public health threats. Diseases of all veterinary species will be balanced according to various aspects of importance, ease of transmission, incidence, and other current concepts. Same course as VMED 7691.

Credit hours: 1

Contact hours: Lecture: 1

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5723 Parasitic Protozoa

Prerequisites: Graduate standing in zoology or entomology or consent of instructor.

Description: Structure, life cycle, physiology, host-parasite relationships, and diagnosis concerned with protozoan parasites. Previously offered as VIDP 5723.

Credit hours: 3

Contact hours: Lecture: 3 Lab: 0

Levels: Graduate, Professional

Schedule types: Lab, Lecture, Combined lecture and lab

Department/School: Dean of Veterinary Med

VBSC 5801 Nonclinical Drug Development

Prerequisites: Graduate standing and consent of instructor.

Description: This course will cover the basic to highly-regulated concepts in nonclinical drug development including pharmacology, pharmacokinetics, and toxicology, along with topics in chemistry manufacturing and controls.

Credit hours: 1

Contact hours: Lecture: 1

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5802 Experimental Principles and Approaches

Prerequisites: Graduate standing and consent of instructor.

Description: A review of experimental principles and approaches essential for design, conduct and analysis of research.

Credit hours: 2

Contact hours: Lecture: 2

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 5902 Toxicology of Chemical Warfare and Chemical Terrorism

Prerequisites: Graduate standing and consent of IOR.

Description: The course will review the history and current issues related to the use of chemicals as agents of warfare and terrorism. Students will participate in weekly roundtable lectures/discussions and review publications related to various toxicological issues surrounding these chemicals. Same course as ITOX 5902.

Credit hours: 2

Contact hours: Lecture: 1 Other: 1

Levels: Graduate

Schedule types: Discussion, Combined lecture & discussion, Lecture

Department/School: Dean of Veterinary Med

VBSC 6000 PhD Research and Dissertation

Prerequisites: Graduate standing.

Description: Research problem for meeting requirements of the PhD degree. Offered for variable credit, 1-15 credit hours, maximum of 45 credit hours.

Credit hours: 1-15

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6110 Seminar

Prerequisites: Graduate standing.

Description: Literature and research problems pertaining to veterinary biomedical sciences. Offered for variable credit, 1-6 credit hours, maximum of 6 credit hours.

Credit hours: 1-6

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6111 Respiratory and Infectious Disease Seminar

Prerequisites: Graduate standing and consent of IOR.

Description: The Oklahoma Center for Respiratory and Infectious Disease hosts seminars each semester. This course requires mandatory attendance for seminars with opportunities to meet with and have discussions with the visiting scientist.

Credit hours: 1

Contact hours: Other: 1

Levels: Graduate

Schedule types: Discussion

Department/School: Dean of Veterinary Med

VBSC 6120 Advanced Physiology of Selected Systems

Prerequisites: Graduate standing and consent of instructor.

Description: Advanced studies in gastrointestinal, cardiovascular, respiratory, excretory and neuroendocrine physiology. Each part of this sequential course may be taken for two hours credit. Student should ascertain the topics before registering for this course a second time. Previously offered as VIDP 6120. Offered for variable credit, 3-15 credit hours, maximum of 15 credit hours.

Credit hours: 3-15

Contact hours: Other: 3

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6200 Topics in Advanced Pharmacology and Toxicology

Prerequisites: Consent of instructor.

Description: Selected topics in advanced pharmacology, including xenobiotic kinetics and dynamics. Previously offered as VAPP 6200. Offered for variable credit, 1-4 credit hours, maximum of 4 credit hours.

Credit hours: 1-4

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6203 Advanced Concepts in Veterinary Immunology

Prerequisites: VBSC 5113 or BIOC 3653 or MICR 3254.

Description: Induction of immune responses, host defense mechanisms, immunoregulation, antigen presentation and immune recognition by B and T lymphocytes, using contemporary research publications. Previously offered as VIDP 6203.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 6213 Toxicology: From Molecules to Ecosystems

Prerequisites: Graduate standing and consent of instructor.

Description: An integrated systems-based approach to toxicology from molecular, cellular, organ, organismal, and ecological perspectives. Previously offered as VBSC 6210. Same course as ITOX 6213.

Credit hours: 3

Contact hours: Lecture: 3

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 6220 Advanced Topics in Cell Biology

Prerequisites: Consent of instructor.

Description: Selected topics in cell biology including membrane traffic, cell signaling, ion transport, cytoskeleton, cell cycle, cell junctions, and adhesion. Offered for variable credit, 1-5 credit hours, maximum of 12 credit hours.

Credit hours: 1-5

Contact hours: Other: 1

Levels: Graduate

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6223 Xenobiotic Disposition

Prerequisites: Graduate standing and consent of instructor.

Description: Quantitative analysis of xenobiotic absorption, metabolism, and excretion. Analysis of xenobiotic concentration-time data using pharmacokinetic software. Same course as ITOX 6223. Previously offered as VBSC 6201.

Credit hours: 3

Contact hours: Lecture: 2 Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study, Lecture, Combined lecture & IS

Department/School: Dean of Veterinary Med

VBSC 6233 Laboratory in Electron Microscopy

Prerequisites: Consent of instructor.

Description: Student learns to prepare specimens for, and to operate, the electron microscope, and techniques for printing and preparation of electron micrographs for publication. Previously offered as VAPP 6233.

Credit hours: 3

Contact hours: Lab: 6

Levels: Graduate, Professional

Schedule types: Lab

Department/School: Dean of Veterinary Med

VBSC 6550 Problems in Functional Morphology

Prerequisites: Consent of instructor.

Description: Investigations in comparative, gross, developmental or histologic morphology for graduate students. Previously offered as VAPP 6550. Offered for variable credit, 1-3 credit hours, maximum of 3 credit hours.

Credit hours: 1-3

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6560 Advanced Pathology Techniques and Special Problems

Prerequisites: Graduate standing in biological sciences and consent of instructor.

Description: Investigations of contemporary techniques and methods used in diagnosis, technical work and research in pathology. Previously offered as VAPP 6560. Offered for variable credit, 1-6 credit hours, maximum of 6 credit hours.

Credit hours: 1-6

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6650 Current Topics in Bacterial Pathogenesis

Prerequisites: VBSC 5552 or equivalent and consent of instructor.

Description: Selected mechanisms in bacterial pathogenesis and host response using recent literature, such as genetic organization of virulence; regulation of virulence factors; attachment, adhesion, and invasion; capsules and outer membrane proteins; intracellular parasitism; endotoxin; exotoxins; iron acquisition and host sequestration; antibiotic resistance mechanisms; innate immunity; acquired immunity; and evasion of host immunity on a rotating basis. Lecture and discussion of directed reading of current literature. Offered for variable credit, 1-10 credit hours, maximum of 10 credit hours.

Credit hours: 1-10

Contact hours: Other: 1

Levels: Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6710 Seminar in Veterinary Clinical Sciences

Prerequisites: Graduate standing in the College of Veterinary Medicine, or internship or residency training program in the Department of Veterinary Clinical Sciences.

Description: Literature and research of problems pertaining to veterinary clinical sciences. Offered for variable credit, 1-3 credit hours, maximum of 3 credit hours.

Credit hours: 1-3

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6712 Advances in Veterinary Medicine I

Prerequisites: Graduate standing in the College of Veterinary Medicine, or internship or residency training program in the Department of Veterinary Clinical Sciences.

Description: Special problems course emphasizing organ system physiology, selected diagnostic and therapeutic topics, and requiring a publication-quality paper on an approved subject.

Credit hours: 2

Contact hours: Lecture: 2

Levels: Graduate

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 6722 Advances in Veterinary Medicine II

Prerequisites: Graduate standing in the College of Veterinary Medicine, or internship or residency training program in the Department of Veterinary Clinical Sciences.

Description: Special problems course emphasizing organ system physiology, selected diagnostic and therapeutic topics, and requiring a publication-quality paper on an approved subject.

Credit hours: 2

Contact hours: Lecture: 2

Levels: Graduate

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 6910 Veterinary Pathology Slide Conference

Prerequisites: Medical degree.

Description: Guided weekly exercises based on veterinary diagnostic microscopy. Course previously offered as VAPP 6910. Offered for variable credit, 1-2 credit hours, maximum of 6 credit hours.

Credit hours: 1-2

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6920 Diagnostic Pathology

Prerequisites: Graduate standing in the College of Veterinary Medicine or written consent of department head.

Description: Weekly review of current cases submitted to the department and the methods employed in diagnosis. Examination of necropsy reports, specimens, and preparations. Students required to formulate diagnoses. Course previously offered as VAPP 6920. Offered for variable credit, 1-4 credit hours, maximum of 4 credit hours.

Credit hours: 1-4

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6930 Comparative Anesthesiology

Prerequisites: Graduate standing in the College of Veterinary Medicine or consent of the head of the department.

Description: Anesthesiology of animals. Course previously offered as VMS 6930. Offered for variable credit, 1-3 credit hours, maximum of 3 credit hours.

Credit hours: 1-3

Contact hours: Other: 1

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6950 Advanced Systemic Pathology

Prerequisites: VMED 5264, graduate standing, consent of instructor.

Description: Total credit not to exceed six for the MS degree and 12 for the PhD Re-enrollment permits the study of two to four different groups of organs and systems of the animal body. A consideration of the pathogenesis and the morphological, biochemical, and comparative aspects of lesions found in organs and tissues of the domesticated animals. MS max 6, PhD max 12. Course previously offered as VAPP 6950. Offered for variable credit, 2-4 credit hours, maximum of 12 credit hours.

Credit hours: 2-4

Contact hours: Other: 2

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6960 Current Topics in Veterinary Clinical Pathology

Prerequisites: DVM or equivalent, graduate standing and consent of instructor.

Description: Obtaining current knowledge and developing critical thinking and reasoning skills through seminars and discussions of current literature from the field of veterinary clinical pathology and general pathology. Course previously offered as VBSC 6965. Offered for variable credit, 1-3 credit hours, maximum of 9 credit hours.

Credit hours: 1-3

Contact hours: Lecture: 1

Levels: Graduate, Professional

Schedule types: Lecture

Department/School: Dean of Veterinary Med

VBSC 6963 Advanced Clinical Pathology

Prerequisites: VMED 5362 or equivalent, graduate standing and consent of instructor.

Description: Applied clinical biochemistry, organ function tests and related cytologic examination. Course previously offered as VAPP 6963.

Credit hours: 3

Contact hours: Other: 3

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med

VBSC 6973 Advanced Hematology

Prerequisites: VMED 5362 or equivalent, graduate standing and consent of instructor.

Description: The etiology and pathogenesis of the diseases of the blood and bone marrow.

Credit hours: 3

Contact hours: Other: 3

Levels: Graduate, Professional

Schedule types: Independent Study

Department/School: Dean of Veterinary Med