**VMED 7113 Veterinary Physiology II**
**Prerequisites:** First-year standing in the College of Veterinary Medicine.
**Description:** Study of molecular, cellular and organ system physiology with emphasis on establishing a base of knowledge and understanding requisite courses within the curriculum of veterinary medicine. Continuation of VMED 7114. (8 week course) Previously offered as VMED 7120.
**Credit hours:** 4
**Contact hours:** Lecture: 2 Contact: 2
**Levels:** Professional
**Schedule types:** Lecture
**Department/School:** Dean of Veterinary Med

**VMED 7114 Veterinary Physiology I**
**Prerequisites:** First-year standing in the College of Veterinary Medicine.
**Description:** To introduce students to the relevant concepts of cell physiology and cardiovascular physiology, providing a foundation for Physiology II and III, clinical coursework and clinical rotations. Previously offered as VMED 7110.
**Credit hours:** 4
**Contact hours:** Lecture: 2 Contact: 2
**Levels:** Professional
**Schedule types:** Lecture
**Department/School:** Dean of Veterinary Med

**VMED 7123 Veterinary Histology**
**Prerequisites:** First-year standing in the College of Veterinary Medicine.
**Description:** Organization and structure of cells and tissues of domestic animals. Previously offered as VMED 5123.
**Credit hours:** 3
**Contact hours:** Lecture: 2 Lab: 2 Contact: 2
**Levels:** Professional
**Schedule types:** Lab, Lecture, Combined lecture and lab
**Department/School:** Dean of Veterinary Med

**VMED 7144 Gross and Developmental Anatomy**
**Prerequisites:** First-year standing in the College of Veterinary Medicine.
**Description:** Embryology and anatomy of domestic mammals using the dog as the primary model. Integrated lecture-dissection laboratory format. Emphasis on the integration of developmental gross, radiographic and applied aspects of veterinary anatomy as they relate to a topographical appreciation of the living individual. Previously offered as VMED 5144.
**Credit hours:** 4
**Contact hours:** Lecture: 1 Lab: 6 Contact: 7
**Levels:** Professional
**Schedule types:** Lab, Lecture, Combined lecture and lab
**Department/School:** Dean of Veterinary Med

**VMED 7152 Zootechnology**
**Prerequisites:** First-year standing in the College of Veterinary Medicine.
**Description:** Animal breeds and identification, animal production and marketing systems and animal handling and restraint as it applies to production and marketing. Previously offered as VMED 5152.
**Credit hours:** 2
**Contact hours:** Lecture: 2 Contact: 2
**Levels:** Professional
**Schedule types:** Lecture
**Department/School:** Dean of Veterinary Med

**VMED 7162 Orientation to the Veterinary Medical Profession**
**Prerequisites:** First-year standing in College of Veterinary Medicine.
**Description:** Introduction to veterinary jurisprudence, ethics, licensing, government regulations, human-animal bond, and evolving issues in animal law and animal welfare.
**Credit hours:** 2
**Contact hours:** Lecture: 2 Contact: 2
**Levels:** Professional
**Schedule types:** Lecture
**Department/School:** Dean of Veterinary Med

**VMED 7221 Epidemiology and Evidence-Based Medicine**
**Prerequisites:** First-year standing in the College of Veterinary Medicine.
**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.
**Credit hours:** 1
**Contact hours:** Lecture: 1 Contact: 1
**Levels:** Professional
**Schedule types:** Lecture
**Department/School:** Dean of Veterinary Med

**VMED 7223 Veterinary Parasitology I**
**Prerequisites:** First-year standing in the College of Veterinary Medicine.
**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. Previously offered as VMED 5323.
**Credit hours:** 3
**Contact hours:** Lecture: 2 Lab: 2 Contact: 4
**Levels:** Professional
**Schedule types:** Lab, Lecture, Combined lecture and lab
**Department/School:** Dean of Veterinary Med

**VMED 7235 Veterinary Physiology III**
**Prerequisites:** First-year standing in the College of Veterinary Medicine.
**Description:** Molecular, cellular and organ system physiology. Establishing a base of knowledge and understanding requisite to subsequent courses. Previously offered as VMED 7230.
**Credit hours:** 5
**Contact hours:** Lecture: 5 Contact: 5
**Levels:** Professional
**Schedule types:** Lecture
**Department/School:** Dean of Veterinary Med

**VMED 7243 Comparative Anatomy**
**Prerequisites:** First year standing in the College of Veterinary Medicine.
**Description:** Comparative and functional gross anatomy of domestic mammals. Emphasis on the integration of developmental gross, radiologic, and applied clinical aspects of veterinary anatomy as they relate to a topographical appreciation of the living individual. Integrated lecture-dissection laboratory format. Course previously offered as VMED 5243.
**Credit hours:** 3
**Contact hours:** Lecture: 1 Lab: 4 Contact: 5
**Levels:** Professional
**Schedule types:** Lab, Lecture, Combined lecture and lab
**Department/School:** Dean of Veterinary Med
VMED 7253 Veterinary Immunology  
**Prerequisites:** First-year standing in College of Veterinary Medicine.  
**Description:** Basic principles of immunology and their application to veterinary medicine. Course previously offered as VMED 7250.  
**Credit hours:** 3  
**Contact hours:** Lecture: 2 Lab: 2 Contact: 4  
**Levels:** Professional  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Dean of Veterinary Med  

VMED 7264 General Pathology  
**Prerequisites:** First-year standing in the College of Veterinary Medicine.  
**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. Course previously offered as VMED 5264.  
**Credit hours:** 4  
**Contact hours:** Lecture: 3 Lab: 2 Contact: 5  
**Levels:** Graduate, Professional  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Dean of Veterinary Med  

VMED 7311 Introduction to Clinics I  
**Prerequisites:** Second-year standing in College of Veterinary Medicine.  
**Description:** Clinical orientation including rotations in instruction and service units in the College. Graded on a pass-fail basis.  
**Credit hours:** 1  
**Contact hours:** Lecture: 2 Contact: 2  
**Levels:** Professional  
**Schedule types:** Lab  
**Department/School:** Dean of Veterinary Med  

VMED 7323 Veterinary Parasitology II  
**Prerequisites:** Second-year standing in the College of Veterinary Medicine.  
**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. Course previously offered as VMED 5423.  
**Credit hours:** 3  
**Contact hours:** Lecture: 2 Lab: 2 Contact: 4  
**Levels:** Professional  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Dean of Veterinary Med  

VMED 7333 Pharmacology I  
**Prerequisites:** Second-year standing in the College of Veterinary Medicine.  
**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. Course previously offered as VMED 5333.  
**Credit hours:** 3  
**Contact hours:** Lecture: 3 Contact: 3  
**Levels:** Professional  
**Schedule types:** Lecture  
**Department/School:** Dean of Veterinary Med  

VMED 7342 Clinical Anatomy  
**Prerequisites:** Second-year standing in the College of Veterinary Medicine.  
**Description:** Aspects of gross anatomy as they relate to clinical applications. Course previously offered as VMED 5342.  
**Credit hours:** 2  
**Contact hours:** Lecture: 1 Lab: 2 Contact: 3  
**Levels:** Professional  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Dean of Veterinary Med  

VMED 7354 Veterinary Bacteriology and Mycology  
**Prerequisites:** Second-year standing in College of Veterinary Medicine.  
**Description:** Important animal diseases caused by bacteria and fungi 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. Course previously offered as VMED 7350.  
**Credit hours:** 4  
**Contact hours:** Lecture: 3 Lab: 2 Contact: 5  
**Levels:** Professional  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Dean of Veterinary Med  

VMED 7363 Clinical Pathology  
**Prerequisites:** Second-year standing in the College of Veterinary Medicine.  
**Description:** Basic concepts pertinent to data interpretation and laboratory methods used in evaluation of disease. Course previously offered as VMED 7363.  
**Credit hours:** 3  
**Contact hours:** Lecture: 2 Lab: 2 Contact: 4  
**Levels:** Professional  
**Schedule types:** Lab, Lecture, Combined lecture and lab  
**Department/School:** Dean of Veterinary Med  

VMED 7401 Introduction to Beef Production Medicine  
**Prerequisites:** Second-year or third-year standing in the College of Veterinary Medicine.  
**Description:** This course will provide students with an understanding of the beef production industry in the United States. Students will gain an understanding of the importance of beef production to the US and global food production, the structure and function of the US beef industry, and the role of a veterinarian in beef production medicine. The course will be a combination of lecture and discussion format. If possible, the course will also include field trips to visit examples of the various segments of the beef industry.  
**Credit hours:** 1  
**Contact hours:** Lecture: 1 Contact: 1  
**Levels:** Professional  
**Schedule types:** Lecture  
**Department/School:** Dean of Veterinary Med
VMED 7411 Best Practices Business Model for Veterinarians
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Online introduction to personal financial literacy and business management. This is a modular-format, online accessible course constructed by the Beef Cattle Institute at Kansas State University. Students will complete the course at their own pace. Graded on a pass/fail basis. Previously offered as VMED 7410.
Credit hours: 1
Contact hours: Contact: 1 Other: 1
Levels: Professional
Schedule types: Independent Study
Department/School: Dean of Veterinary Med

VMED 7412 Anesthesiology
Prerequisites: Second-year standing in the College of Veterinary Medicine.
Description: Application of the principles of veterinary anesthesiology to incorporate fundamental aspects of physiology and pharmacology in the anesthetic management of important domestic species. Course previously offered as VMED 5412.
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7413 Food Safety and Public Health
Prerequisites: Second-year standing in the College of Veterinary Medicine.
Description: Approaches and skills for identifying, investigating and mitigating occurrences of disease outbreaks; introduction to zoonotic diseases; role veterinarians play in protecting public health; potential human health hazards in foods of animal origin. Course previously offered as VMED 5313.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7431 Small Animal Nutrition
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Basic nutrition and feeding recommendations for healthy dogs and cats. The incorporation of nutritional counseling into preventative medicine programs is a focus. Lectures, case discussions, and laboratories will be delivered on site, online and by teleconference.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7432 Pharmacology II
Prerequisites: Second-year standing in the College of Veterinary Medicine.
Description: Continuation of VMED 7333 that includes the mechanisms of action, disposition, adverse effects, and indications for groups of pharmacological agents used in veterinary medicine. Course previously offered as VMED 5432.
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7441 Veterinary Emergency Response and Disaster Management
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Introduction to the principles and structure of emergency management including the Incident Command System, the hierarchies of EM, and responsibilities of local, state and federal emergency responders from city emergency managers to FEMA. Basics of animal disaster management to include hazard recognition, the disaster life cycle, development of Emergency Operations Plans and management of various species of animals in disasters.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7443 Diagnostic Imaging
Prerequisites: Second-year standing in the College of Veterinary Medicine.
Description: Radiographic theory, techniques, and interpretation. Introduction to alternate methods, including ultrasonography. Course previously offered as VMED 5443.
Credit hours: 3
Contact hours: Lecture: 3 Lab: 0 Contact: 3
Levels: Professional
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Dean of Veterinary Med

VMED 7451 Advanced Veterinary Clinical Parasitology
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Offers an opportunity to explore key topics in veterinary parasitology in greater depth, including perceptions of parasites in society, diagnostic challenges in medicine, the scientific evidence behind parasite resistance and toxicity, and the marketing of parasiticides in veterinary medicine. In addition, students are guided through the process of developing and communicating management strategies for specific parasite challenges.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med
VMED 7454 Veterinary Virology
Prerequisites: Second-year standing in the College of Veterinary Medicine.
Description: Course covers important animal diseases caused by viruses. These infectious diseases will be taught in an animal systems approach. The first part will provide an overview of veterinary virology. The second part will discuss the different viral diseases of animals. Material for each of the viral infections includes the mechanisms of the disease processes and the relationship of such processes to disease development, diagnosis, treatment and control. Also covered are the relationships of zoonotic diseases to community and environmental health as well as important zoonoses. Course previously offered as VMED 7450.
Credit hours: 4
Contact hours: Lecture: 4 Contact: 4
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7481 Special Topics in Applied Anatomy: A Case Based Approach
Prerequisites: First, second or third-year standing in the College of Veterinary Medicine.
Description: Students will choose a small or large animal topic where anatomy plays a role in either the cause or treatment of the condition (or both). The IOR/student will contact an appropriate clinical faculty member who will choose a case from the VTH representing the condition of choice, the student will prepare a 20-30 minute presentation discussing the condition relevant anatomy and present case example from vth.
Credit hours: 1
Contact hours: Contact: 1 Other: 1
Levels: Professional
Schedule types: Independent Study
Department/School: Dean of Veterinary Med

VMED 7482 Hemolymphatic and Oncology
Prerequisites: Second-year standing in the College of Veterinary Medicine.
Description: Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to the blood and lymphatic system (six-week module). Course previously offered as VMED 5522.
Credit hours: 2
Contact hours: Lecture: 3 Contact: 3
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7502 Ophthalmology
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Pathogenesis, diagnosis, medical and surgical treatment, and prevention of ophthalmic disease in small animal and equine patients. Course previously offered as VMED 7501.
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7513 TCVM Mixed Animal Acupuncture
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: An introductory course focusing on the biology and major acupuncture points allowing for students to experience increased success and reduced stress while attending currently offered off-site acupuncture programs.
Credit hours: 3
Contact hours: Lecture: 1 Lab: 4 Contact: 5
Levels: Professional
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Dean of Veterinary Med

VMED 7512 Laboratory Animal Medicine
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Introduction of veterinary medicine and major clinical care of commonly used laboratory animals. Course previously offered as VMED 7512.
Credit hours: 1-2
Contact hours: Lab: 2-4 Contact: 2-4
Levels: Professional
Schedule types: Lab
Department/School: Dean of Veterinary Med

VMED 7514 Veterinary Practice Management
Prerequisites: Second- or third-year standing in College of Veterinary Medicine.
Description: An introductory course focusing on the biology and major acupuncture points allowing for students to experience increased success and reduced stress while attending currently offered off-site acupuncture programs.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7510 Research Elective
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Participation in faculty-directed projects to enhance career development in veterinary biomedical research. Students participate in a process mimicking investigator-initiated research by developing a research proposal, participating in a competitive peer-review process, and reporting on completed research project. Letter grade to be assigned.
Course previously offered as VMED 5510. Offered for variable credit, 1-2 credit hours, maximum of 2 credit hours.
Credit hours: 1-2
Contact hours: Lab: 2-4 Contact: 2-4
Levels: Professional
Schedule types: Lab
Department/School: Dean of Veterinary Med

VMED 7521 Veterinary Practice Management
Prerequisites: Second- or third-year standing in College of Veterinary Medicine.
Description: An introductory course focusing on the biology and major acupuncture points allowing for students to experience increased success and reduced stress while attending currently offered off-site acupuncture programs.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med
VMED 7522 Small Animal Medical Diagnosis: Signs and Symptoms
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Introduction to clinical problem solving through application of a problem-oriented approach to clinical diagnosis. Discussion of major problems (clinical signs and symptoms) affecting animals, and the pathophysiology of each clinical sign, its differential diagnosis and symptomatic management. Review of key anatomical, pathological and immunological concepts learned in basic science courses. Course previously offered as VMED 5522.
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7533 Toxicology
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Diagnosis and management of intoxications involving plant, chemical and biological toxins. Course previously offered as VMED 6533.
Credit hours: 3
Contact hours: Lecture: 3 Contact: 3
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7541 Introduction to Food Animal Production Systems
Prerequisites: Second-year or third-year standing in the College of Veterinary Medicine.
Description: Consists of a week-long field trip of food animal production operations in Oklahoma and Texas providing exposure to beef cattle, swine and dairy production industries. Includes group presentation of the experience.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7542 Clinical Endocrinology I
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
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.
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7551 Food Animal: Advanced Techniques
Prerequisites: Second-year standing in the College of Veterinary Medicine.
Description: This elective is designed to give second year students the opportunity to learn how to perform some of the most commonly performed procedures in food animal medicine in regards to the modalities of treatment, diagnostics, herd health, local anesthesia and pharmacology. One hour per week will be spent as formal lecture to provide some theory for the procedures and techniques to be performed during the laboratory periods. Classroom/Lab Supply & Materials Fee of $30.00 applies.
Credit hours: 1
Contact hours: Lab: 2 Contact: 2
Levels: Professional
Schedule types: Lab
Department/School: Dean of Veterinary Med

VMED 7561 Introduction to Shelter Medicine
Prerequisites: Second-year or third-year standing in the College of Veterinary Medicine.
Description: Introduction course on topics relevant to shelter medicine. Discusses major subjects and issues important to practicing medicine in the shelter setting.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7562 Avian and Exotic Pet Medicine
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Clinical diagnosis, management and treatment, prognosis, and prevention of diseases in avian and exotic pets. Introductory material provided to familiarize students with the species discussed and where clinically important; however, student understanding of the basic sciences required and assumed. Additional fee of $55.00 per credit hour applies. Course previously offered as VMED 5562.
Credit hours: 2
Contact hours: Lab: 4 Contact: 4
Levels: Professional
Schedule types: Lab
Department/School: Dean of Veterinary Med

VMED 7563 Musculoskeletal Systems
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Diagnosis and management of intoxications involving plant, chemical and biological toxins. Previously offered as VMED 6563.
Credit hours: 3
Contact hours: Lecture: 2 Lab: 2 Contact: 4
Levels: Professional
Schedule types: Lab, Lecture, Combined lecture and lab
Department/School: Dean of Veterinary Med

VMED 7564 Alimentary System
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to the alimentary system. Previously offered as VMED 6574.
Credit hours: 4
Contact hours: Lecture: 4 Contact: 4
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med
VMED 7571 Introduction to Behavioral Medicine  
**Prerequisites:** Second- or third-year standing in College of Veterinary Medicine. 
**Description:** Normal behavior of the dog and cat, basic procedures and methods for diagnosing and treating behavioral problems. Previously offered as VMED 5571. 
**Credit hours:** 1 
**Contact hours:** Lecture: 3 Contact: 3 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med  

VMED 7583 Dermatology and Endocrinology  
**Prerequisites:** Third-year standing in the College of Veterinary Medicine. 
**Description:** Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to skin and the endocrine system (nine-week module). Previously offered as VMED 5683. 
**Credit hours:** 3 
**Contact hours:** Lecture: 3 Contact: 3 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med  

VMED 7591 International Veterinary Medicine  
**Prerequisites:** Second-year or third-year standing in the College of Veterinary Medicine. 
**Description:** Overview of the importance of veterinarians and the wide range of activities in which they participate around the world including the military, public health agencies, humanitarian relief agencies, wildlife preservation groups and faith-based agencies. 
**Credit hours:** 1 
**Contact hours:** Lecture: 1 Contact: 1 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med  

VMED 7592 Junior Surgery I  
**Prerequisites:** Third-year standing in the College of Veterinary Medicine. 
**Description:** Introduction to fundamental principles of surgery. Didactic material will be followed by surgical laboratories. Previously offered as VMED 7523. 
**Credit hours:** 2 
**Contact hours:** Lecture: 1 Lab: 2 Contact: 3 
**Levels:** Professional 
**Schedule types:** Lab, Lecture, Combined lecture and lab 
**Department/School:** Dean of Veterinary Med  

VMED 7594 Senior Surgery II  
**Prerequisites:** Third-year standing in the College of Veterinary Medicine. 
**Description:** Introduction to fundamental principles of surgery. Didactic material will be followed by surgical laboratories. Graded on a pass/fail basis. Previously offered as VMED 7523. 
**Credit hours:** 1 
**Contact hours:** Lab: 2 Contact: 2 
**Levels:** Professional 
**Schedule types:** Lab 
**Department/School:** Dean of Veterinary Med  

VMED 7595 Equine Theriogeneology Laboratory  
**Prerequisites:** Second- or third-year standing in the College of Veterinary Medicine. 
**Description:** Introduction to palpation, ultrasonographic examination and breeding preparation of the mare reproductive tract. Classroom/Lab Supply & Materials Fee of $300.00 applies. 
**Credit hours:** 1 
**Contact hours:** Lab: 3 Contact: 3 
**Levels:** Professional 
**Schedule types:** Lab 
**Department/School:** Dean of Veterinary Med  

VMED 7560 Equine Clinical Medicine Laboratory  
**Prerequisites:** Second- or third-year standing in the College of Veterinary Medicine. 
**Description:** Problems in the basic sciences taught as lecture or lab. Previously offered as VMED 6620. Offered for variable credit, 1-8 credit hours, maximum of 8 credit hours. 
**Credit hours:** 1-8 
**Contact hours:** Lecture: 1 Contact: 1-8 Other: 1-8 
**Levels:** Professional 
**Schedule types:** Independent Study 
**Department/School:** Dean of Veterinary Med  

VMED 7561 Equine Theriogeneology Laboratory  
**Prerequisites:** Second- or third-year standing in the College of Veterinary Medicine. 
**Description:** Problems in the basic sciences taught as lecture or lab. Previously offered as VMED 6620. Offered for variable credit, 1-8 credit hours, maximum of 8 credit hours. 
**Credit hours:** 1-8 
**Contact hours:** Lecture: 1 Contact: 1-8 Other: 1-8 
**Levels:** Professional 
**Schedule types:** Independent Study 
**Department/School:** Dean of Veterinary Med  

VMED 7562 Clinical Science Elective  
**Prerequisites:** Second- or third-year standing in the College of Veterinary Medicine. 
**Description:** Problems in the clinical sciences taught as lecture or lab. Previously offered as VMED 6620. Offered for variable credit, 1-8 credit hours, maximum of 8 credit hours. 
**Credit hours:** 1-8 
**Contact hours:** Lecture: 1 Contact: 1-8 Other: 1-8 
**Levels:** Professional 
**Schedule types:** Independent Study 
**Department/School:** Dean of Veterinary Med  

VMED 7563 Cardiopulmonary System  
**Prerequisites:** Third-year standing in the College of Veterinary Medicine. 
**Description:** Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to the cardiovascular and respiratory systems. 
**Credit hours:** 4 
**Contact hours:** Lecture: 4 Contact: 4 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med  

VMED 7564 Clinical Neurology  
**Prerequisites:** Third-year standing in the College of Veterinary Medicine. 
**Description:** Pathogenesis, diagnosis, pathology, medical and surgical treatment and prevention of nervous system diseases. 
**Credit hours:** 2 
**Contact hours:** Lecture: 2 Contact: 2 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med  

VMED 7610 Basic Science Elective  
**Prerequisites:** Second- or third-year standing in the College of Veterinary Medicine. 
**Description:** Problems in the basic sciences taught as lecture or lab. Previously offered as VMED 6610. Offered for variable credit, 1-8 credit hours, maximum of 8 credit hours. 
**Credit hours:** 1-8 
**Contact hours:** Contact: 1-8 Other: 1-8 
**Levels:** Professional 
**Schedule types:** Independent Study 
**Department/School:** Dean of Veterinary Med  

VMED 7612 Clinical Neurology  
**Prerequisites:** Third-year standing in the College of Veterinary Medicine. 
**Description:** Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to the cardiovascular and respiratory systems. 
**Credit hours:** 4 
**Contact hours:** Lecture: 4 Contact: 4 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med  

VMED 7620 Clinical Science Elective  
**Prerequisites:** Second- or third-year standing in the College of Veterinary Medicine. 
**Description:** Problems in the clinical sciences taught as lecture or lab. Previously offered as VMED 6620. Offered for variable credit, 1-8 credit hours, maximum of 8 credit hours. 
**Credit hours:** 1-8 
**Contact hours:** Contact: 1-8 Other: 1-8 
**Levels:** Professional 
**Schedule types:** Independent Study 
**Department/School:** Dean of Veterinary Med  

VMED 7614 Cardiopulmonary System  
**Prerequisites:** Third-year standing in the College of Veterinary Medicine. 
**Description:** Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to the cardiovascular and respiratory systems. 
**Credit hours:** 4 
**Contact hours:** Lecture: 4 Contact: 4 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med  

VMED 7565 Endocrine System  
**Prerequisites:** Second- or third-year standing in the College of Veterinary Medicine. 
**Description:** Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to skin and the endocrine system (nine-week module). Previously offered as VMED 5683. 
**Credit hours:** 3 
**Contact hours:** Lecture: 3 Contact: 3 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med  

VMED 7566 Veterinary Medicine (VMED)  
**Prerequisites:** Second- or third-year standing in the College of Veterinary Medicine. 
**Description:** Introduction to fundamental principles of surgery. Didactic material will be followed by surgical laboratories. Graded on a pass/fail basis. Previously offered as VMED 7523. 
**Credit hours:** 1 
**Contact hours:** Lecture: 3 Contact: 3 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med  

VMED 7568 Veterinary Medicine (VMED)  
**Prerequisites:** Second- or third-year standing in the College of Veterinary Medicine. 
**Description:** Introduction to fundamental principles of surgery. Didactic material will be followed by surgical laboratories. Graded on a pass/fail basis. Previously offered as VMED 7523. 
**Credit hours:** 1 
**Contact hours:** Lecture: 3 Contact: 3 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med  

VMED 7570 Veterinary Medicine (VMED)  
**Prerequisites:** Second- or third-year standing in the College of Veterinary Medicine. 
**Description:** Introduction to fundamental principles of surgery. Didactic material will be followed by surgical laboratories. Graded on a pass/fail basis. Previously offered as VMED 7523. 
**Credit hours:** 1 
**Contact hours:** Lecture: 3 Contact: 3 
**Levels:** Professional 
**Schedule types:** Lecture 
**Department/School:** Dean of Veterinary Med
VMED 7652 Introduction to Clinics II
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Rotations through instructional and service areas, including the Veterinary Teaching Hospital of the College of Veterinary Medicine. Previously offered as VMED 6652.
Credit hours: 2
Contact hours: Lab: 8 Contact: 8
Levels: Professional
Schedule types: Lab
Department/School: Dean of Veterinary Med

VMED 7661 Infectious and Parasitic Diseases of Wild Animals
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Systematic approach to infectious and parasitic diseases affecting wild animals. Capture, restraint, and disease recognition in wild species, population management implications of disease diagnosis. Previously offered as VMED 5661.
Credit hours: 1
Contact hours: Lecture: 3 Contact: 3
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7662 Urinary System
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Pathogenesis, diagnosis, pathology, medical and surgical treatment, and prevention of diseases related primarily to the urinary system.
Credit hours: 2
Contact hours: Lecture: 5 Contact: 5
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7671 Clinical Endocrinology II
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Advanced medical endocrinology, focusing on endocrine diseases associated with (1) dysfunction of the endocrine pancreas, (2) selected endocrineopathies of the reproductive system, and (3) therapeutic use of hormones to control reproductive activity of animals.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7681 Case Studies In Clinical Neurology
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Case based, problem oriented clinical diagnosis, management, treatment and prevention of small animal neurological diseases.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7682 Small Ruminant Production, Management, Medicine and Surgery
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Production, management, medical and surgical diseases of sheep, goats, and llamas used for production and companion animals. Previously offered as VMED 5682.
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7710 Veterinary Study Abroad
Prerequisites: Second- or third-year standing in the College of Veterinary Medicine.
Description: Participation in international animal health activities having an educational component, either through didactic instruction, service learning, workshop participation, and others. Offered for variable credit, 1-3 credit hours, maximum of 3 credit hours.
Credit hours: 1-3
Contact hours: Contact: 1-3 Other: 1-3
Levels: Professional
Schedule types: Independent Study
Department/School: Dean of Veterinary Med

VMED 7711 Problem-Based Ophthalmology
Prerequisites: Third-year standing in the College of Veterinary Medicine. Case-based, problem-oriented discussions of small animal and equine ophthalmology cases.
Description: Case-based, problem-oriented discussions of small animal and equine ophthalmology cases. Key points in the case history, the significance of signalment in the diagnosis, clinical diagnosis, supportive diagnostic tests, and treatment. General discussion of the specific disease following the case discussion.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med
VMED 7712 Systemic Pathology: Case Studies and Mechanisms of Disease
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Selected diseases of major organ systems will be approached as an exercise in critical diagnostics thinking. Review of salient pathological responses for each system. Relevant journal articles to emphasize need for continued, self-guided learning.
Credit hours: 2
Contact hours: Lecture: 1 Contact: 2 Other: 1
Levels: Professional
Schedule types: Discussion, Combined lecture & discussion, Lecture
Department/School: Dean of Veterinary Med

VMED 7742 Bovine Theriogenology Laboratory
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Palpation techniques in cows. An elective restricted to students entering food animal practice. Classroom/Lab Supply & Materials Fee of $250.00 applies. Previously offered as VMED 7741.
Credit hours: 2
Contact hours: Lab: 4 Contact: 4
Levels: Professional
Schedule types: Lab
Department/School: Dean of Veterinary Med

VMED 7761 Introduction to Integrative Medicine: An Investigation into Holistic Veterinary Medicine
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: This course will provide an overview of current modalities being utilized as alternative therapies in Veterinary Medicine. The student will gain an appreciation for the importance of complementary medicine, and the evidence available to support its use. Students will also gain an understanding of critically assessing the research available and determining whether the information is clinically relevant.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7771 Essentials in Equine Practice: Medicine
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Topics are related to equine medicine, ophthalmology, cardiology, and/or theriogenology that are not covered in detail in core curriculum. Aim is to supplement information and provide exposure to basic clinical techniques commonly performed in equine practice. A clinical perspective will be emphasized and hands-on laboratories used as an adjunct when appropriate. Classroom/Lab Supply & Materials Fee of $450.00 applies.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7781 Professional Veterinary Medicine
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: A capstone course preparing third-year veterinary students for clinical training. Topics include: non-technical skills, knowledge, aptitudes, and attitudes; veterinary career opportunities in public practice, and preparation for the North American Veterinary Licensing Examination (NAVLE).
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Graduate, Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7802 Small Animal Emergency Medicine
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: A case-based approach to diagnosis/discussion of common diseases in small animal emergency medicine. Critical thinking and problem solving skills will be utilized in case, with a goal of allowing students to develop their diagnostic interpretation and emergency management skills clinically. Case materials will be supplemented with additional resources to emphasize the importance of self-guided learning.
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7811 Basic Techniques in Equine Surgery and Sports Medicine
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: To provide the equine or mixed animal practice oriented student with in-depth knowledge/techniques concerning topics and procedures important for success in equine practice. Focuses on topics relative to the practice of equine sports medicine and minor surgery (lameness examination, castration, field anesthesia). Material will be applied to hands-on laboratories using models, live horses and/or cadaver specimens when appropriate. Graded on a pass-fail basis. Classroom/Lab Supply & Materials Fee of $450.00 applies.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7822 Food Animal Production Medicine
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Production animal agriculture and the veterinarian’s present and future role in these enterprises. Cattle production is emphasized. Cycles of production, economics and health programs will be discussed. For students intending to enter mixed animal or exclusive food animal practices. Course previously offered as VMED 6622.
Credit hours: 2
Contact hours: Lecture: 2 Contact: 2
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med
VMED 7841 Food Animal Surgery
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: Detailed examination and review of commonly utilized local anesthetic techniques, injectable anesthetic techniques, and surgical procedures in food animal practice. Major topics include digital, mammary, gastrointestinal, and urethral surgery as well as cesarean section. Classroom/Lab Supply & Materials Fee of $300.00 applies. Course previously offered as VMED 6641.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7861 Cytology
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: An introduction to clinical diagnosis using cytology. Topics include sample collection, inflammatory lesions, neoplasia, lymph node cytology, respiratory washes, synovial fluids, and body cavity effusions. The course consists of lectures, multi-head microscope and individual microscope laboratories; cases will be predominantly small animals.
Credit hours: 1
Contact hours: Lab: 2 Contact: 2
Levels: Professional
Schedule types: Lab
Department/School: Dean of Veterinary Med

VMED 7881 Introduction to Ultrasound
Prerequisites: Third-year standing in the College of Veterinary Medicine.
Description: This course will teach the principles of ultrasound imaging, focusing on small animal imaging, but will have general topics as well that apply to all species and applications.
Credit hours: 1
Contact hours: Lecture: 1 Contact: 1
Levels: Professional
Schedule types: Lecture
Department/School: Dean of Veterinary Med

VMED 7941 Clinical Skills Outcomes Assessment
Prerequisites: Fourth-year standing in the College of Veterinary Medicine.
Description: Assessment of clinical skills using checklists and/or brief case summaries.
Credit hours: 1
Contact hours: Contact: 1 Other: 1
Levels: Professional
Schedule types: Independent Study
Department/School: Dean of Veterinary Med