**VETERINARY MEDICINE (VMED)**

VMED 501 Veterinary Medicine Terminology  
**Prerequisites:** Must be admitted to the UNL-ISU Veterinary Medicine Program  
**Description:** Overview of medical terminology used by veterinarians.  
**Credit Hours:** 1  
Max credits per semester: 1  
Max credits per degree: 1  
Grading Option: Graded  

VMED 505 Principles in Population Medicine  
**Prerequisites:** Must be admitted to the UNL-ISU Veterinary Medicine Program.  
**Notes:** Students may be required to complete an off campus observation outside of regularly scheduled class times.  
**Description:** Prevention and control of disease in animal populations is a vital function of veterinary medicine. Familiar with population medicine concepts using a practical approach. While the primary focus is on population medicine as it applies to companion animal sheltering, the principles presented have broad application across several fields of practice including but not limited to large animal, zoo, wildlife, and research.  
**Credit Hours:** 1  
Max credits per semester: 1  
Max credits per degree: 1  
Grading Option: Grade Pass/No Pass Option  
Offered: SPRING  

VMED 506 Introduction to the Principles of Biosecurity and Disease Transmission  
**Prerequisites:** Must be admitted to the UNL-ISU Veterinary Medicine Program  
**Description:** An introduction into biosecurity and the principles of disease transmission. Covering the concepts of infectious disease transmission with practical applications for control and prevention.  
**Credit Hours:** 2  
Max credits per semester: 2  
Max credits per degree: 2  
Grading Option: Grade Pass/No Pass Option  
Offered: SPRING  

VMED 508 Spanish for Veterinarians  
**Prerequisites:** Must be admitted to the UNL-ISU Veterinary Medicine Program.  
**Notes:** At least two years of high school Spanish or equivalent coursework highly recommended.  
**Description:** Achieve a working vocabulary of technical and clinical veterinary terms that will enable professional communication with Spanish-speaking clients, farm managers, or other animal care givers.  
**Credit Hours:** 1  
Max credits per semester: 1  
Max credits per degree: 1  
Grading Option: Graded  
Offered: SPRING  

VMED 511 Foundations of Veterinary Medicine  
**Prerequisites:** Must be admitted to the UNL-ISU Veterinary Medicine Program  
**Description:** Basic behavior, animal handling and restraint; medical record keeping; physical examination; and clinical cases.  
**Credit Hours:** 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded  

VMED 512 Foundations of Veterinary Medicine II  
**Prerequisites:** Must be admitted to the UNL-ISU Veterinary Medicine Program. VMED 511.  
**Description:** Animal welfare issues, clinical cases, animal handling and restraint.  
**Credit Hours:** 2  
Max credits per semester: 2  
Max credits per degree: 2  
Grading Option: Graded  

VMED 513 Foundations of Veterinary Medicine III  
**Prerequisites:** Must be admitted to the UNL-ISU Veterinary Medicine Program. VMED 512.  
**Description:** Ethical issues in veterinary medicine, clinical cases, animal handling and restraint.  
**Credit Hours:** 3  
Max credits per semester: 3  
Max credits per degree: 3  
Grading Option: Graded  

VMED 514 Foundations of Veterinary Medicine IV  
**Prerequisites:** Must be admitted to the UNL-ISU Veterinary Medicine Program. VMED 513.  
**Description:** Ethical issues in veterinary medicine, clinical cases, animal handling and restraint.  
**Credit Hours:** 2  
Max credits per semester: 2  
Max credits per degree: 2  
Grading Option: Graded  

VMED 521 Cattle Production Systems I  
**Prerequisites:** Must be admitted to the UNL-ISU Veterinary Medicine Program  
**Notes:** Field trips to the Mead Facility will be made as necessary to complete certain objectives. Some field trips may be required on weekends.  
**Description:** Overview of tools and methods veterinarians use to optimize productivity and improve financial success for beef cattle producers, including how to evaluate and monitor production/management strategies and how to integrate the many factors involved in decision making. Specific topics will include late winter feeding, managing cows for breeding, managing replacement heifers, estrus synchronization, artificial insemination, preparing for calving, handling newborn calves, herd genetics, bull selection, vaccines, parasite control, prebreeding health programs, branding, bull management, and marketing strategies.  
**Credit Hours:** 1  
Max credits per semester: 1  
Max credits per degree: 1  
Grading Option: Graded  

Prerequisite for: VMED 522
VMED 522 Cattle Production Systems II
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program; Cattle Productions Systems I.
Notes: Field trips to the Mead Facility will be made as necessary to complete certain objectives. Some field trips may be required on weekends.
Description: Overview of tools and methods veterinarians use to optimize productivity and improve financial success for beef cattle producers, including how to evaluate and monitor production/management strategies and how to integrate the many factors involved in decision making. Specific topics will include pre-weaning processing, record analysis, data entry, reproductive management, pregnancy diagnosis, replacement heifer selection, weaning data, pregnancy diagnosis data, replacement heifer data, winter nutrition, and feedlots.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded

VMED 531 Introduction to Animal Welfare
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: The objective of this course is to develop knowledge of the fundamental principles of animal welfare, in terms of science, ethics and cultural components.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded

VMED 550 Nutritional Biochemistry
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: Introduce basic biochemical aspects of metabolism and function of energy, protein, fat, minerals and vitamins in the diet. Determine nutrient requirements of food animals, pets and horses under various physiological states. Understand fate of various nutrients in simple stomached animals, ruminants and cecal fermenters. Discuss clinical nutrition problems specific to each species.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded

VMED 583 Principles of Surgery I
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: General principles of surgery for and common surgical problems in animals.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded
Prerequisite for: VMED 589

VMED 584 Veterinary Clinical Pathology
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: Integration of hematology, clinical chemistry and cytology in mechanisms of disease.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Graded

VMED 589 Anesthesiology and Small Animal Surgery
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program. VMED 583.
Description: Anesthetic equipment, agents and procedures for domestic animals. General principles of surgery of small/companion animal surgery.
Credit Hours: 5
Max credits per semester: 5
Max credits per degree: 5
Grading Option: Graded

VMED 596 Special Topics in Veterinary Medicine
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: Aspects of veterinary medicine not covered elsewhere in the curriculum presented as the need arises. Topic varies.
Credit Hours: 0-3
Min credits per semester: 1
Max credits per semester: 3
Max credits per degree: 6
Grading Option: Grade Pass/No Pass Option

VMED 596A Independent Study: Gross Systematic Pathology Lab
Prerequisites: Second year students in the Professional Program of Veterinary Medicine
Description: Evaluation, description and pathogenesis of gross pathologic images of most vertebrate species.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Grade Pass/No Pass Option

VMED 630 Veterinary Anatomy I
Crosslisted with: VBMS 830
Prerequisites: First year standing in the Professional Program in Veterinary Medicine
Description: Comparative and topographic anatomy of the dog, cat, and pig.
Credit Hours: 6
Max credits per semester: 6
Max credits per degree: 6
Grading Option: Grade Pass/No Pass Option
Prequisite for: VMED 631, VBMS 831

VMED 631 Anatomy II
Crosslisted with: VBMS 831
Prerequisites: VBMS 830
Description: Gross anatomy of domestic ruminants, horses, and birds. An advanced course in detailed gross anatomy incorporating intensive dissection laboratory sessions and classroom lectures.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Graded

VMED 637 Veterinary Neuroanatomy
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: Concepts of nervous system functioning, problem identification, and neurologic diseases.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Grade Pass/No Pass Option
VMED 642 Veterinary General, Cellular and Molecular Pathology
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: General mechanisms of disease and lesion development in animals at the molecular, cellular, and organ levels. Topics include: introduction to pathology; basic terminology; overview of normal cell biology; cellular and tissue responses to injury; vascular disorders and thrombosis; acute inflammation; chronic inflammation and wound healing; diseases of immunity; neoplasia and tumor biology.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Grade Pass/No Pass Option

VMED 645 Animal Physiology I
Crosslisted with: ASCI 845, VBMS 845
Prerequisites: First year standing in and admission to VMED.
Notes: Primarily for students in animal or biological sciences or veterinary medicine.
Description: Mammalian physiology and cellular mechanisms. Physiology of the cell, embryology, and neuro-sensory, neuromuscular, endocrine, and reproductive systems.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Grade Pass/No Pass Option
Offered: FALL

VMED 646 Animal Physiology II
Crosslisted with: ASCI 846, VBMS 846
Prerequisites: First year standing in and admission to VMED.
Notes: ASCI/VBMS 846/BIOS 814/VMED 646 is designed for students in animal or biological sciences or veterinary medicine.
Description: Mammalian physiology and cellular mechanisms. Physiology of the digestive, cardiovascular, respiratory, and renal systems.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Graded
Offered: SPRING

VMED 650 Anatomical Radiology
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: The study of normal radiographic anatomy of the dog and cat. Emphasis on patient positioning and proper selection of image modalities based on the anatomic area in question.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Grading Option: Graded

VMED 654 Pharmacology
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: General principles; drug disposition; drugs acting on the nervous, cardiovascular, renal, gastrointestinal and endocrine systems.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded

VMED 660 Veterinary Histology
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: Fundamental eukaryotic cell biology and early development, microscopic structure of basic cell types, tissues and organs of the body, following a system/apparatus approach.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Grade Pass/No Pass Option

VMED 672 Veterinary Systemic Pathology I
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program.
Notes: Continuation of VMED 672.
Description: Emphasis on disease process, immunopathology and pathogenesis and mechanisms of disease in domestic animals and select enzootic disease of wildlife and birds.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Grade Pass/No Pass Option

VMED 673 Veterinary Systemic Pathology II
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program.
Notes: Continuation of VMED 672.
Description: Emphasis on disease process, immunopathology and pathogenesis and mechanisms of disease in domestic animals and select enzootic disease of wildlife and birds.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Grade Pass/No Pass Option

VMED 676 Veterinary Parasitology
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: Biology of parasites of major veterinary importance. The understanding required for control of parasitism.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Grade Pass/No Pass Option

VMED 680 Veterinary Immunology
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: Principles and mechanisms underlying the immune system.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded

VMED 686 Veterinary Microbiology
Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program
Description: Bacteria and fungi of veterinary importance. Mechanisms of disease production and laboratory diagnostic methods.
Credit Hours: 5
Max credits per semester: 5
Max credits per degree: 5
Grading Option: Graded
VMED 687 Veterinary Virology

Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program

Description: The unique biological features of viruses in terms of their life cycle and tropism in their hosts.

Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded

VMED 688 Veterinary Public Health

Prerequisites: Must be admitted to the UNL-ISU Veterinary Medicine Program

Description: Fundamentals of epidemiology, zoonotic diseases, occupational health, food safety, and other public health topics.

Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Grading Option: Graded