College of Veterinary Medicine

101 Veterinary Medicine in Society
Spring. 1(1-0)
Role of the veterinary profession in animal and human health. Impact of veterinary medicine on society.

110 Veterinary Medical Terminology
Fall. 1(1-0) R: Open only to Veterinary Technology majors. Approval of college. Veterinary medical terminology, focusing on fundamental recognition, interpretation and usage of medical terms.

120 Applied Biochemistry and Nutrients for Veterinary Technicians
Fall. 2(2-0) P: BS 111 and BS 111L R: Open only to Veterinary Technology majors. Approval of college. Basic fundamentals of cell structure and metabolism. Energy metabolism, nutrients and nutrient requirements of common domestic species.

130 Comparative Anatomy for Veterinary Technicians
Fall. 2(1-2) P: BS 111 and BS 111L R: Open only to Veterinary Technology majors. Approval of college. Gross anatomy of the common animal species encountered in veterinary medicine. Overview of the functional anatomy of the musculoskeletal, digestive, cardiovascular, cutaneous, respiratory, urogenital, nervous, and endocrine systems and the special senses.

140 Pharmacology for Veterinary Technicians
Fall. 2(2-0) P: MTH 103 or MTH 110 or MTH 118 R: Open only to Veterinary Technology majors. Approval of college. Fundamentals of characteristics, classification and usage of veterinary pharmaceuticals. Introduction to and application of dosage and formulation calculations.

150 Hospital Procedures and Communication
Spring. 2(2-0) P: VM 110 and VM 140 R: Open only to Veterinary Technology majors. Development of various modalities of professional and client communication skills.

155 Veterinary Technology Careers and Professional Development
Fall. 1(1-0) R: Open only to Veterinary Technology majors. Approval of college. Career options in veterinary technology, discussion of professional, ethical and legal considerations. Portfolio development, resume and cover-letter writing skills.

160 Small Animal Nursing Skills
Spring. 3(2-3) P: VM 110 and VM 130 and VM 140 R: Open to students in the Veterinary Technology major. Approval of college. Small animal nursing including principles of restraint, physical examination, medical management techniques, and behavior of common companion animals. Recognition of common canine and feline breeds.

165 Large Animal and Laboratory Animal Nursing Care Techniques
Fall. 2(1-2) P: VM 110 and VM 130 and VM 140 R: Open only to Veterinary Technology majors. Fundamentals of the handling of equine, food animal and laboratory animal species. Breed identification, specimen collection, physical exam, medication administration and other nursing care procedures relevant to the species.

170 Hematology and Immunology for Veterinary Technicians
Spring. 2(2-0) P: VM 110 and VM 120 R: Open only to Veterinary Technology majors. C: VM 175 concurrently. Structure and function of normal blood cells, cellular and humoral immunity, mechanisms of hemostasis, blood group serology, transfusion medicine and vaccinology.

175 Clinical Pathology Laboratory I for Veterinary Technicians
Spring. 1(0-2) P: VM 110 and VM 120 R: Open only to Veterinary Technology majors. C: VM 170 concurrently. Veterinary clinical pathology laboratory including diagnostic procedures in hematology, serology and ELISA methodology.

176 Clinical Pathology Laboratory II for Veterinary Technicians
Fall. 1(2-0) P: VM 175 and VM 170 R: Open only to Veterinary Technology majors. Comprehensive veterinary clinical pathology laboratory, including diagnostic procedures in urology, dermatology, cytology, and advanced methods in hematology.

205 Preventive Animal Health Care for Veterinary Technicians
Spring. 3(3-0) P: VM 130 and VM 140 and VM 250 R: Open to undergraduate students in the Veterinary Technology major. Approval of college. Development of husbandry techniques to enhance wellness and reduce the risk of disease, injury and stress in common domestic and exotic animals.

210 Surgical Nursing for Veterinary Technicians
Fall. 2(2-0) P: VM 160 R: Open only to Veterinary Technology majors. C: VM 215 concurrently or VM 303 concurrently. Role of the veterinary technician as a member of the veterinary surgical team.

215 Surgical Nursing and Anesthetic Management Laboratory
Fall. 1(0-4) R: Open only to Veterinary Technology majors. C: VM 210 concurrently or VM 303 concurrently. Principles and techniques in veterinary surgical nursing and anesthesia.

245 Parasitology for Veterinary Technicians
Spring. 2(1-2) P: VM 140 and VM 175 RB: VM 250 R: Open only to Veterinary Technology majors. Parasites of veterinary and public health importance, including gross and microscopic morphology, transmission, and control.

250 Veterinary Comparative Clinical Physiology
Fall. 5(5-0) P: BS 111 or LB 145 R: Open to undergraduate students in the Veterinary Technology major. Approval of college. C: VM 110 concurrently and VM 120 concurrently and VM 130 concurrently. Function, regulation, and integration of organs and organ systems of common domestic species. Concepts with clinical relevance.

255 Small Animal Diseases and Management
Fall. 3(3-0) P: VM 160 and VM 170 and VM 250 R: Open only to Veterinary Technology majors. Pathophysiology, transmission, diagnostic process, clinical management and prevention of canine and feline diseases.

265 Dentistry Techniques for Veterinary Technicians
Spring. 1(0-4) P: VM 215 R: Open only to Veterinary Technology majors. Veterinary dental techniques and oral cavity assessment for companion animals.

270 Advanced Skills Development for Veterinary Technicians
Spring. 1(0-2) P: VM 210 and VM 215 and VM 255 R: Open to students in the Veterinary Technology major. Approval of college. Service-oriented approach to health care development in an operational animal care facility.

275 Large Animal Diseases and Management
Spring. 3(3-0) P: VM 165 and VM 170 and VM 250 R: Open only to Veterinary Technology majors. Diseases, husbandry, preventative health care and client education for equine and food animal species.

285 Clinical Nutrition for Veterinary Technologists
Fall. 1(1-0) P: VM 250 R: Open only to Veterinary Technology majors. Nutritional assessment and management of common domestic species in veterinary medicine.

290 Special Studies in Veterinary Medicine
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open to undergraduate students in the College of Veterinary Medicine. Approval of college. Faculty-directed individual study on an experimental, theoretical or applied problem. May involve a supervised off-campus experience.

295 Biomedical Research and Regulatory Issues for Veterinary Technologists
Fall. 1(1-0) P: VM 150 R: Open only to Veterinary Technology majors. Principles and techniques of biomedical research, governance and regulation of animal care and use.

303 Anesthesiology for Veterinary Technicians
Fall. 2(2-0) P: VM 140 and VM 250 R: Open only to Veterinary Technology majors. C: VM 215 concurrently or VM 210 concurrently. Pharmacologic action of preanesthetic and anesthetic drugs. Principles and techniques of induction, maintenance, monitoring and recovery of the patient. Humane methods of euthanasia.
Radiology for Veterinary Technicians
Spring, 2(1-2) P: VM 110 and VM 130 R: Open to undergraduate students in the Veterinary Technology major. Approval of college.
Production of radiographs, components of the x-ray machine, use of screens and grids, handling film, imaging quality, film processing, patient positioning, and radiation safety.

Veterinary practice economics, personnel management, inventory control and marketing techniques.

Advanced Clinical Pathology Techniques
Spring, 1(0-2) P: VM 175 and VM 176 R: Open only to Veterinary Technology majors. Advanced cytologic techniques including sample collection, processing and evaluation.

Introduction to Zoo and Aquarium Science
Spring, 3(3-0) Interdepartmental with Fisheries and Wildlife and Landscape Architecture and Zoology. Administered by Zoology. P: BS 110 or LB 144 or BS 148H
Fundamentals of zoo and aquarium operations including research, interpretation, design, nutrition, captive breeding, conservation, ethics and management.

Veterinary Technology Clerkship in Anesthesiology
Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 303 and VM 304 R: Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in anesthesia.

Veterinary Technology Clerkship in Radiology
Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 303 and VM 304 R: Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in radiology.

Veterinary Technology Clerkship in Companion Animal Medicine
Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 303 and VM 304 R: Completion of pre-clinical course work. R: Open only to Veterinary Technology majors. Application of principles and techniques in restraint, examination, nursing care, monitoring, and preventive medicine of companion animals.

Veterinary Technology Clerkship in Companion Animal Surgery
Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 303 and VM 304 R: Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in surgical nursing.

Veterinary Technology Clerkship in Equine Medicine and Surgery
Fall, Spring, Summer. 3 credits. P: VM 415 R: Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in equine medicine and surgery.

Veterinary Technician Clerkship in Food Animal and Equine Medicine and Surgery
Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 303 and VM 304 R: Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in food animal and equine medicine and surgery.

Veterinary Technology Clerkship in Emergency Medicine
Fall, Spring, Summer. 3 credits. P: VM 412 R: (VM 410 and VM 411 and VM 413) and Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in emergency medicine.

Veterinary Technology Clerkship in Cardiology
Fall, Spring, Summer. 3 credits. P: VM 412 R: (VM 410 and VM 411 and VM 413) and Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in cardiology.

Veterinary Technology Clerkship in Ophthalmology
Fall, Spring, Summer. 3 credits. P: VM 412 R: (VM 410 and VM 411 and VM 413) and Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in ophthalmology.

Veterinary Technology Clerkship in Critical Care
Fall, Spring, Summer. 3 credits. P: VM 412 R: (VM 410 and VM 411 and VM 413) and Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in critical care.

Veterinary Technology Clerkship in Large Animal Anesthesia
Fall, Spring, Summer. 3 credits. P: VM 410 and VM 415 R: Completion of preclinical coursework. R: Open only to Veterinary Technology majors. SA: VM 460, VM 472 Application of principles and techniques of food animal and equine anesthesia.

Veterinary Technology Clerkship in Food Animal Medicine
Fall, Spring, Summer. 3 credits. P: VM 415 R: Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in food animal medicine.

Veterinary Technology Clerkship in Clinical Pathology
Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 304 R: Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in clinical pathology.

Veterinary Technology Clerkship in Necropsy
Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 303 and VM 304 R: Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in postmortem examination of common domestic species with emphasis on specimen description, collection, and submission.

Veterinary Technology Clerkship in Biomedical Research
Fall, Spring, Summer. 3 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: VM 270 and VM 275 and VM 303 and VM 304 R: (VM 410) or Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in biomedicale research involving laboratory animals.

Veterinary Technology Clerkship in Zoo and Wildlife Medicine
Fall, Spring, Summer. 3 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: VM 270 and VM 275 and VM 303 and VM 304 R: (VM 410) or Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in zoo and wildlife medicine.

Veterinary Technology Clerkship in Clinical Parasitology
Fall, Spring, Summer. 3 credits. P: VM 245 R: Completion of preclinical coursework. R: Open only to Veterinary Technology majors. Application of principles and techniques in clinical parasitology.

Veterinary Technology Clerkship in Dermatology
Fall, Spring, Summer. 3 credits. R: Completion of pre-clinical course work. R: Open only to Veterinary Technology majors. Application of principles and techniques in dermato.

Veterinary Technology Clerkship in Special Problems
Fall, Spring, Summer. 3 to 12 credits. A student may earn a maximum of 12 credits in all enrollments for this course. P: VM 270 and VM 275 and VM 303 and VM 304 R: Completion of the didactic core curriculum. R: Open only to Veterinary Technology majors. Application of principles and techniques in experimental, therapeutic, or laboratory medicine.

Veterinary Clinical Examination and Techniques
Fall, 2(1-2) R: Open to graduate-professional students in the College of Veterinary Medicine. Introduction to history taking, physical examination, and techniques associated with examination of various species.
513 Ethical and Animal Welfare Issues in the Veterinary Profession
Fall. 2(1-2) R: Open to graduate-professional students in the College of Veterinary Medicine.
Identifying and communicating ethical challenges and animal welfare issues in the veterinary profession.

514 Comparative Lifestage Nutrition
Spring. 1(1-0) R: Open to graduate-professional students in the College of Veterinary Medicine.

524 Basic Science in Clinical Medicine
Spring. 1(0-2) R: Open to graduate-professional students in the College of Veterinary Medicine.
Integration of information learned in basic science courses by application to clinical cases.

532 Veterinary Integrative Problem Solving
Fall. 2(1-2) RB: Completion of Year 1 in the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.
Integration of subject material from concurrent and previous courses using a problem-based learning format.

533 Veterinary Epidemiology
Fall. 3(3-0) RB: Completion of Year 1 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.
Basic epidemiologic theory and study design. Veterinary descriptive and inferential biostatistics. Production veterinary medicine.

541 Veterinary Career Development and Practice Management
Spring. 2(2-0) R: Open to graduate-professional students in the College of Veterinary Medicine.
Foundations of career development and practice management skills.

543 Cardiovascular Diseases
Spring. 2(2-0) RB: Completion of year 1 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.
Cardiovascular diseases of domestic animals. Pathogenesis, diagnosis, and treatment.

544 Veterinary Public Health
Fall. 2(2-0) RB: Completion of year 1 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.
Veterinary environmental, occupational, and public health. Milk and meat hygiene. Control of zoonotic diseases.

545 Principles of Anesthesia and Surgery
Spring. 4(3-2) RB: Completion of year 1 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.
Administering anesthetic agents. Fundamentals of surgery including sterile technique, tissue handling, suture patterns, wound healing, and postoperative care.

546 Musculoskeletal Diseases
Spring. 4(4-0) RB: Completion of year 1 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.

547 Respiratory Diseases
Fall. Spring. 2(2-0) RB: Completion of year 1 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.

548 Principles of Diagnostic Imaging
Spring. 1(1-0) R: Open to graduate-professional students in the College of Veterinary Medicine.
Basic principles of diagnostic imaging including radiographic physics, safety, interpretive principles and normal veterinary anatomy.

549 Applied Diagnostic Imaging
Fall. Spring. 1(0-2) RB: Completion of year 1 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.

553 Theriogenology and Urinary Diseases
Fall. 5(4-2) RB: Completion of Year 2 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.

554 Hematological, Oncological and Dermatological Diseases
Fall. 3(3-0) RB: Completion of Year 2 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.
Hematological, oncological and dermatological diseases of domestic animals. Pathogenesis, clinical presentation, diagnosis, and treatment.

555 Neurological and Ophthalmological Diseases
Fall. 3(3-0) RB: Completion of Year 2 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.
Neurological and ophthalmological diseases of domestic animals. Pathogenesis, diagnosis, and treatment.

557 Operative Surgery
Fall. 2(1-3) RB: Completion of Year 2 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.
Soft tissue and orthopedic surgery of domestic animals. Preoperative evaluation, surgery, and postoperative care.

558 Digestive Diseases of Domestic Animals
Fall. 3(3-0) RB: Completion of Year 2 of the graduate professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.
Digestive diseases of domestic animals. Diagnosis, therapy, prophylaxis, and management.

559 Metabolic and Endocrinological Diseases
Fall. 2(2-0) RB: Completion of Year 1 in the graduate professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.
Pathogenesis, diagnosis, and treatment of metabolic and endocrinologic diseases of domestic animals.

611 Veterinary Externship
Fall. Spring. Summer. 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. RB: Completion of 5 semesters of the graduate-professional program in the College of Veterinary Medicine.
Clinical or research experience in an off-campus setting.

690 Special Problems in Veterinary Medicine
Fall. Spring. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate-professional students in the College of Veterinary Medicine.
Individual study directed by a faculty member on an experimental, theoretical, or applied problem. May involve off-campus experience in a preceptorial mode.

692 Career Development and Business Skills
Spring. 3 credits. RB: Open only to graduate-professional students who have completed semester 5 of the graduate professional program in the College of Veterinary Medicine.
Development of leadership, business and interpersonal skills, career planning, and goal setting.

810 Food Safety Introduction and Professional Management
Fall. Spring. Summer. 2 to 3 credits. A student may earn a maximum of 3 credits in all enrollments for this course. RB: One year of college level science including one semester of microbiology. R: Open only to students in the Master of Science degree in Food Safety or approval of college.
Various food safety topics. Organizational, managerial, leadership and communication skills.

811 Evolution and Ecology of Foodborne Pathogens
Spring. 3 credits. R: Open only to students in the Master of Science degree in Food Safety or approval of college.
Evolution of foodborne pathogens. Ecology of microbial organisms found in the food chain from introduction through human consumption.
812 Food Safety Toxicology
Spring. 3 credits. R: Open only to students in the Master of Science degree in Food Safety or approval of college.


813 Special Studies in Food Safety
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to students in the Master of Science degree in Food Safety or approval of college.

Faculty supervised independent study on an experimental, theoretical or applied project. May involve on-campus or off-campus experience.

814 Packaging for Food Safety
Summer. 3 credits. Interdepartmental with Packaging. Administered by Veterinary Medicine. RB: Enrollment in graduate program in related field. R: Open to masters students in the Food Safety major and open to graduate students in the Packaging major or approval of college.

Current issues in packaging and food safety.

815 Applied Project in Food Safety
Fall, Spring, Summer. 6 credits. P: VM 810 R: Open to masters students in the Food Safety major or approval of college.

Faculty directed student project.

816 Food Irradiation
Fall, Spring. 3 credits. RB: Enrollment in graduate program in related field. R: Open only to the students in Food Safety or approval of college.

Principles and practice of the irradiation of food for pathogen reduction, food preservation, and the elimination of pests and insects.

817 Pre-Harvest Food Safety
Fall, Spring. 3 credits. RB: Enrollment in graduate program in related field. R: Open only to master's students in Food Safety or approval of college.

Principles for improvement of pre-harvest food safety. Emphasis on microbial, chemical, and toxic hazards. Strategies to reduce pre-harvest risks in many food production species.

820 Current Topics in Comparative Medicine and Integrative Biology
Spring. 1 to 2 credits. A student may earn a maximum of 6 credits in all enrollments for this course. RB: Enrollment in graduate-professional program or graduate program in the biomedical sciences. R: Open to graduate students in the College of Veterinary Medicine.

Topics in comparative medicine using recently published literature to illustrate concepts.

821 Food Protection and Defense
Fall, Spring. 3 credits. Interdepartmental with Criminal Justice. Administered by Veterinary Medicine. R: Open only to graduate students in the College of Veterinary Medicine or Food Safety major or Criminal Justice major or approval of college.

Food systems and criminal justice approaches to prepare for and solve issues relating to food safety and defense.

822 Aquatic Animal Medicine
Fall. 3(2-2) Interdepartmental with Fisheries and Wildlife and Pathobiology and Diagnostic Investigation. Administered by Fisheries and Wildlife. RB: (FW 423) or prior course work in animal ecology, microbiology, parasitology or pathology.

Health management techniques and pathobiological processes relating to the etiology, diagnosis, and control of diseases affecting aquatic animal populations and communities.

828 Food Safety Seminar Series
Fall, Spring, Summer. 3 credits. Interdepartmental with Agriculture and Natural Resources and Natural Science and Social Science. Administered by Veterinary Medicine. RB: Enrollment in graduate program in related discipline.

Selected current topics covering the broad areas of food safety as they relate to production, processing, transport, microbiology, toxicology, and social and human dimensions.

829 Problems in Food Safety
Fall. 1(1-0) Interdepartmental with Agriculture and Natural Resources and Natural Science and Social Science. Administered by Veterinary Medicine. RB: Enrollment in graduate program in related discipline.

In-depth discussion of selected problems in food safety.

830 Food Safety Research Methods
Summer. 3(3-0) R: Open to graduate students in the Food Safety major or approval of college.

Conducting and interpreting food safety research. Interpretation and critique of the literature, study design, and communication of food safety research.

831 Foodborne Disease Epidemiology for the Professional
Summer. 3(3-0) R: Open to graduate students in the Food Safety major or approval of college.

Applied foodborne disease investigation through the use of case studies.

832 Food Safety Disease Control
Summer. 3(3-0) R: Open to graduate students in the Food Safety major or approval of college.

Applied approaches to food borne disease control using case studies.

899 Master's Thesis Research
Fall, Spring, Summer. 1 to 10 credits. A student may earn a maximum of 18 credits in all enrollments for this course.

Masters thesis research.

999 Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 36 credits. A student may earn a maximum of 36 credits in all enrollments for this course.

Doctoral dissertation research.