VETERINARY **MEDICINE**

VM

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: Approval of college.

Veterinary medical terminology, focusing on fundamental recognition, interpretation and usage of medical terms.

Veterinary Comparative Nutrition

Spring. 2(2-0) R: Approval of college. Energy metabolism, nutrients and nutrient requirements of common domestic species.

130 Comparative Anatomy for Veterinary Technicians 1

Fall. 2(1-2) P: {Completion of Tier I Writing Requirement and (BS 161 and BS 171)} or LB 145 R: Approval of college. C: VM 250

concurrently.

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.

Pharmacology for Veterinary Technicians

Fall. 2(2-0) P: MTH 103 or MTH 110 or MTH 116 or MTH 124 or MTH 132 R: Approval of college.

Fundamentals of characteristics, classification and usage of veterinary pharmaceuticals. Introduction to and application of dosage and formulation calculations.

Hospital Procedures and Communication 150

Fall. 2(2-0) R: Approval of college. C: VM 110 concurrently and VM 140 concurrently.

Development of various modalities of professional and client communication skills.

Veterinary Technology Careers and 155 **Professional Development**

Spring. 1(1-0) R: 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 and VM 150

Small animal nursing including principles of restraint, physical examination, medical management techniques, and behavior of common companion ani-Recognition of common canine and feline mals. breeds

Large Animal and Laboratory Animal 165 **Nursing Care Techniques**

Fall. 2(1-2) P: VM 160 and VM 205
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 250 and VM 110 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.

Clinical Pathology Laboratory I for **Veterinary Technicians**

Spring. 1(0-2) P: VM 110 and VM 250 C: VM 170 concurrently.

Veterinary clinical pathology laboratory including diagnostic procedures in hematology, serology and ELISA methodology.

Clinical Pathology Laboratory II for **Veterinary Technicians** Fall. 1(0-2) P: VM 175

Comprehensive veterinary clinical pathology laboratory, including diagnostic procedures in urology, dermatology, cytology, and advanced methods in

Preventive Animal Health Care for Veterinary Technicians

Spring. 3(3-0) P: VM 150 and VM 110 Development of husbandry techniques to enhance wellness and reduce the risk of disease, injury and stress in common domestic and exotic animals.

Surgical Nursing for Veterinary Technicians

Fall. 2(1-1) P: VM 160 and VM 130 and VM 250 R: Approval of department. C: VM 215 concurrently and VM 303 concurrently.

Role of the veterinary technician as a member of the veterinary surgical team.

Surgical Nursing and Anesthetic Management Laboratory

Fall. 1(0-4) P: VM 160 and VM 130 and VM 250 C: VM 210 concurrently and VM 303 concurrently.

Principles and techniques in veterinary surgical nursing and anesthesia.

Parasitology for Veterinary Technicians Spring. 2(1-2) P: VM 140 and VM 176 and VM 205 RB: VM 250

Parasites of veterinary and public health importance, including gross and microscopic morphology, transmission, and control.

Veterinary Comparative Clinical Physiology

Fall. 5(5-0) P: {Completion of Tier I Writing Requirement and (BS 161 and BS 171)} or LB 145 R: Approval of college. C: VM 130 concurrently.

Function, regulation, and integration of organs and organ systems of common domestic species. Concepts with clinical relevance.

Small Animal Diseases and Management Fall. 3(3-0) P: VM 160 and VM 170 and VM

250 and VM 175

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 and VM 210 and VM 303

Veterinary dental techniques and oral cavity assessment for companion animals.

270 **Advanced Skills Development for Veterinary Technicians**

Spring. 1(0-3) P: VM 210 and VM 215 and VM 303

Service-oriented approach to health care development in an operational animal care facility.

Large Animal Diseases and Management Spring. 3(3-0) P: VM 165 and VM 250

Diseases, husbandry, preventative health care and client education for equine and food animal species.

285 **Clinical Nutrition for Veterinary** Technologists

Fall, Spring. 1(1-0) P: VM 255 and VM 120 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: Approval of

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 and VM 205

Principles and techniques of biomedical research, governance and regulation of animal care and use.

Anesthesiology for Veterinary 303 **Technicians**

Fall. 2(1-1) P: VM 140 and VM 160 and VM 130 and VM 250 R: Approval of department. C: VM 215 concurrently and 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

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.

305 **Hospital Practice Management for Veterinary Technologists**

Spring. 2(2-0) P: VM 150

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

310 **Advanced Clinical Pathology Techniques** Spring. 1(0-2) P: VM 176 and VM 255

Advanced cytologic techniques including sample collection, processing and evaluation.

337 Introduction to Foodborne Pathogens

Fall, Summer. 3(3-0) R: Open to graduate students in the Food Safety Major or approval of department.

Microbial classification, growth, genetics, epidemiology, transmission and ecology of major food and waterborne pathogens including bacteria, viruses, parasites, prions and protozoa.

369 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 162 or LB 144 or BS 182H

Fundamentals of zoo and aquarium operations including research, interpretation, design, nutrition, captive breeding, conservation, ethics and management.

410 Veterinary Technology Clerkship in Anesthesiology

Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 245 and VM 304 RB: Completion of preclinical coursework.

Application of principles and techniques in anesthesiology.

411 Veterinary Technology Clerkship in Radiology

Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 245 and VM 304 RB: Completion of preclinical coursework.

Application of principles and techniques in radiology.

412 Veterinary Technology Clerkship in Companion Animal Medicine

Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 245 and VM 304 RB: Completion of pre-clinical course work.

Application of principles and techniques in restraint, examination, nursing care, monitoring, and preventive medicine of companion animals.

413 Veterinary Technology Clerkship in Companion Animal Surgery

Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 245 and VM 304 RB: Completion of preclinical coursework.

Application of principles and techniques in surgical nursing.

414 Veterinary Technology Clerkship in Equine Medicine and Surgery

Fall, Spring, Summer. 3 to 6 credits. P: VM 270 and VM 275 and VM 304 RB: Completion of preclinical coursework.

Application of principles and techniques in equine medicine and surgery.

415 Veterinary Technician Clerkship in Food Animal and Equine Medicine and Surgery Fall, Spring, Summer. 3 to 6 credits. P: VM

270 and VM 275 and VM 304 RB: Completion of preclinical coursework.

Application of principles and techniques in food animal and equine medicine and surgery.

450 Veterinary Technology Clerkship in Emergency Medicine

Fall, Spring, Summer. 3 credits. P: VM 412 RB: (VM 410 and VM 411 and VM 413) and Completion of preclinical coursework.

Application of principles and techniques in emergency medicine.

451 Veterinary Technology Clerkship in Cardiology

Fall, Spring, Summer. 3 credits. P: VM 412 RB: (VM 410 and VM 411 and VM 413) and Completion of preclinical coursework.

Application of principles and techniques in cardiology

452 Veterinary Technology Clerkship in Neurology

Fall, Spring, Summer. 3 credits. P: VM 412 RB: (VM 410 and VM 411 and VM 413) and Completion of preclinical coursework.

Application of principles and techniques in neurology and physical therapy.

453 Veterinary Technology Clerkship in

Ophthalmology
Fall, Spring, Summer. 3 credits. P: VM 412
and VM 413 RB: (VM 410) and Completion
of preclinical coursework.

Application of principles and techniques in ophthalmology.

454 Veterinary Technology Clerkship in Critical Care

Fall, Spring, Summer. 3 credits. P: VM 412 RB: (VM 410 and VM 411 and VM 413) and Completion of preclinical coursework.

Application of principles and techniques in critical

455 Veterinary Technology Clerkship in Companion Animal Oncology

Fall, Spring, Summer. 3 credits. P: VM 412 and VM 413 RB: Completion of preclinical coursework.

Application of principles and techniques in companion animal oncology.

456 Veterinary Technology Clerkship in Companion Animal Physical Rehabilitation

Fall, Spring, Summer. 3 credits. P: VM 412 RB: Completion of preclinical coursework.

Application of principles and techniques of companion animal physical rehabilitation, particularly those animals recovering from orthopedic and neurologic injuries and surgeries.

458 Veterinary Technology Clerkship in Companion Animal Diagnostic Ultrasound

Fall, Spring, Summer. 3 credits. P: VM 411 RB: Completion of preclinical coursework.

Application of principles and techniques of Diagnostic Ultrasound

466 Veterinary Technology Clerkship in Large Animal Anesthesia

Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 303 and VM 304 RB: Completion of preclinical coursework. SA: VM 460, VM 472

Application of principles and techniques of food animal and equine anesthesiology.

470 Veterinary Technology Clerkship in Food Animal Medicine

Fall, Spring, Summer. 3 to 6 credits. P: VM 270 and VM 275 and VM 304 RB: Completion of preclinical coursework.

Application of principles and techniques in food animal medicine.

480 Veterinary Technology Clerkship in Clinical Pathology

Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 303 and VM 245 RB: Completion of preclinical coursework.

Application of principles and techniques in clinical pathology.

482 Veterinary Technology Clerkship in Necropsy

Fall, Spring, Summer. 3 credits. P: VM 270 and VM 275 and VM 303 and VM 245 RB: Completion of preclinical coursework.

Application of principles and techniques in postmortem examination of common domestic species with emphasis on specimen description, collection, and submission.

483 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 and VM 245 RB: (VM 410 and VM 482) and Completion of preclinical coursework.

Application of principles and techniques in biomedical research involving laboratory animals.

484 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 and VM 245 RB: (VM 410) or Completion of preclinical coursework.

Application of principles and techniques in zoo and wildlife medicine.

486 Veterinary Technology Clerkship in Clinical Parasitology

Fall, Spring, Summer. 3 credits. P: VM 245 RB: Completion of preclinical coursework.

Application of principles and techniques in clinical parasitology.

487 Veterinary Technology Clerkship in Dermatology

Fall, Spring, Summer. 3 credits. P: VM 412 RB: Completion of pre-clinical course work. Application of principles and techniques in derma-

490 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 and VM 245 RB: Completion of preclinical coursework.

Application of principles and techniques in experimental, therapeutic, or laboratory medicine.

511 Clinical Competencies I

Fall. 2(1-2) R: Open to graduateprofessional 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 graduateprofessional students in the College of Veterinary Medicine.

Nutritional assessment and management of the physiological stages of growth. Adult maintenance, gestation, lactation, performance, and geriatric concerns of common domestic species.

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

533

Veterinary EpidemiologyFall. 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 Col-

lege 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 graduateprofessional students in the College of Veterinary Medicine.

Foundations of career development and practice management skills.

Cardiovascular Diseases 543

Spring. 2(2-0) RB: Completion of year 1 of 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.

Veterinary Public Health 544

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 Col-

lege of Veterinary Medicine.

Administering anesthetic agents. Fundamentals of surgery including sterile technique, tissue handling, suture patterns, wound healing, and postoperative

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.

Musculoskeletal diseases of domestic animals. Pathogenesis, diagnosis, and treatment.

547 **Respiratory Diseases**

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.

Respiratory diseases of domestic animals. Pathogenesis, diagnosis, and treatment.

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 ImagingFall. 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 Col-

lege of Veterinary Medicine.
Radiographic interpretation. Recognition of abnormalities. Development of verbal skills in image interpretation. Alternate imaging modalities.

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.

Urogenital diseases of domestic animals. Pathogenesis, diagnosis, and treatment.

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.

Neurological and Ophthalmological 555 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.

Operative Surgery 557

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.

Digestive Diseases of Domestic Animals 558

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.

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.

Private Practice Ownership

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

Demographic studies, business entities, financing, leadership, business and marketing plans, and entrepreneurial ownership considerations when starting a practice or buying an existing practice.

Veterinary Externship
Fall, Spring, Summer. 3 credits. A student may earn a maximum of 9 credits in all enrollments for this course. RB: Completion of semester 5 of the graduate-professional program in the College of Veterinary Medicine. R: Open to graduate-professional students in the College of Veterinary Medicine.

Clinical or research experience in an off-campus

settina.

Special Problems in Veterinary Medicine 690

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

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. R: Open to graduate-professional students in the College of Veterinary Medicine

Development of leadership, business and interpersonal skills, career planning, and goal setting.

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 stu-dents in the Master of Science degree in Food Safety or approval of college.

Various food safety topics. Organizational, managerial, leadership and communication skills.

Evolution and Ecology of Foodborne 811 Pathogens

Fall, Spring. 3 credits. R: Open to masters students in the Food Safety major 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
Fall, Spring. 3 credits. R: Open to masters students in the Food Safety major or approval of college.

Nature and properties of toxic substances through the food chain. Nature and magnitude of hazards to human health

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 to masters students in the Food Safety major

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.

Applied Project in Food Safety 815

Fall, Spring, Summer. 3 credits. P: VM 810 or approval of college R: Open to masters students in the Food Safety major or approval of college.

Faculty directed student project.

817 **Pre-Harvest Food Safety**

Spring. 3 credits. RB: Enrollment in graduate program in related field. R: Open to masters students in the Food Safety Major 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.

Current Topics in Comparative Medicine 820 and Integrative Biology Fall, 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. 3 credits. Interdepartmental with Criminal Justice. Administered by Veterinary Medicine. R: Open to graduate students in the College of Veterinary Medicine or in the Food Safety major or in the Veterinary Medicine major or in the 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

823 **International Veterinary Medicine**

Spring. 3(3-0) RB: Professional or graduate status with knowledge of animal production or animal health. R: Open to masters students or graduate-professional students or lifelong graduate students in the College of Veterinary Medicine or in the Food Safety major or in the Large Animal Clinical Sciences major. Approval of college.

Global burden of animal and zoonotic diseases. Regulations for animal health and animal trade internationally. Comparative approaches for animal health management.

Global Food Safety
Spring. 3(3-0) RB: Professional or graduate status with knowledge of food safety. R:
Open to graduate students in the Food Safety major or approval of college.

Understanding food safety challenges in different geographic regions. Development of interventions for food safety in a global context.

Quantifying Food Risk

Fall. 3(3-0) RB: Professional or graduate status with knowledge of food safety. R: Open to masters students or graduateprofessional students in the College of Veterinary Medicine or in the School of Criminal Justice or in the School of Packaging or in the Food Safety major or approval of college.

Food risks based on quality, safety, fraud and intentional threats.

Creating a Food Safety Culture 826

Summer of odd years. 3(3-0) RB: Professional or graduate status with knowledge of food safety. R: Open to graduate students in the Food Safety Major. Approval of college.

Explores proven, evidence-based ways to change or strengthen the food safety culture of an organization and influence employee behavior.

Food Safety Modernization Act and **Hazard Analysis and Critical Control** Point Systems

Spring. 3(3-0) RB: Professional or graduate status with knowledge of food safety. R: Open to graduate students in the Food

Safety Major. Approval of college.
Food safety requirements for food establishments subject to the Food Safety Modernization Act. Food safety management systems, with a focus on the Hazard Analysis and Critical Control Points (HACCP) Approach.

828 **Food Safety Seminar Series**

Fall, Spring. 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 disci-

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

Food Safety Research Methods

Fall, Summer. 3(3-0) R: Open to graduate students in the College of Veterinary Medicine 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**

Fall, Summer. 3(3-0) R: Open to masters students in the Food Safety major or approval of college.

Applied foodborne disease investigation through the use of case studies.

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.

835 **Food Safety for Produce**

Summer. 3(3-0) R: Open to graduate students in the Food Safety Major or approval of department.

Overview of food safety requirements for the produce sector with a focus on Good Agriculture Practices (GAPS).

840 **Anti-Counterfeit Strategy and Product** Protection

Summer. 3(3-0) Interdepartmental with Criminal Justice and Packaging. Administered by Veterinary Medicine. R: Open to graduate students in the School of Criminal Justice or in the School of Packaging or in the Food Safety major or approval of department.

Theory and applied techniques for anti-counterfeit strategies and product protection for food and consumer products.

Master's Thesis Research 899

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.

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.