

### Catalog Course Descriptions-Fall 2019/Spring 2020

#### Year 1 – Semester 1 - Required Courses

**CVM 710 Veterinary Anatomy I (37 lecture hours + 75 lab hours =5 credits)** – A systemic and topographic study of macroscopic body structure is presented via lecture and laboratory. This course utilizes the dog and cat as the primary models for the study of general mammalian form; however, the anatomical information learned may be applied (with varying degrees of modification) to essentially all domestic mammals as well as many exotic species. A team approach is used for laboratory dissection. Clinical applications are incorporated throughout the course in alignment with the ultimate goal of contributing to the education of a practitioner.

**CVM 711 Veterinary Physiology I (45 lecture hours=3 credits)** - The CVM 711 course is a detailed study of cellular, tissue, organ function and their control and integration in animals. Emphasis will be placed on cardiovascular, endocrine, nervous, and muscular physiology. The basic physical and chemical principles that underlie physiological processes will be described.

**CVM 713 Parasitology (43 lecture hours + 6 lab hours =3 credits)** - This course teaches principles of parasitology, including etiology, pathogenesis, diagnosis, treatment and control of selected parasitic diseases in animals. Students will gain knowledge of life cycle biology, transmission strategies, and natural hosts of major parasites of animals.

**CVM 714 One Health I – Professional Foundations (8 lecture hours=.5 credit)** - This course will focus on the aspects of One Health that relate to the individual and professional foundations of veterinary medicine. It will include the history of veterinary medicine to introduce them to their professional cultural inheritance, human animal bond, animal welfare, the role of animals in human psychosocial health, professional ethics and jurisprudence, work life balance, professional organizations and future opportunities for veterinarians.

**CVM 715 Clinical Skills (30 lab hours=1 credit)** - Students will be taught safe handling and restraint techniques and will be introduced to the general physical examination of various domestic animal species, including small animals (dogs & cats), companion animals (horses) and production animals (cows & small ruminants). Students will also be introduced to psychomotor skills needed for surgery and other clinical procedures.

**CVM 716 Research Methods in Veterinary Medicine (8 lecture hours=0.5 credit)** - This course will introduce students to the methods in biomedical research. Students will gain basic understanding of literature search, critical evaluation of scientific publications, hypothesis development, experimental design, data analysis, use of animals in research, IACUC, IRB, communication of research findings (written and verbal formats), and grant writing.

**CVM 718 Professional Skills (2 lecture hours + 26 lab hours=1 credit)** - Students will be introduced to professional communication skills and their importance in veterinary medicine. Students will be exposed to the following: Four Core Communication Skills, Level 1 Financial Literacy, Interpersonal skills development & Emotional Intelligence. Students will demonstrate these skills in simulated client interactions.

**CVM 722 Veterinary Immunology (45 lecture hours=3 lecture credits)** -. The primary goal of this course is to provide students with an understanding of basic mechanisms of veterinary immunology, thereby giving them the tools to keep up with developments in the field and help in solving clinical immunological problem throughout their careers.

#### Year 1 – Semester 2 - Required Courses

**CVM 712 Histology (30 lab hours=1 lab credit)** - This course is a series of laboratories designed to develop the necessary skills to identify microscopic anatomy of basic cell types, tissues, organs, and organ systems. Principles learned in this course will be applied in simultaneous and subsequent courses in the CVM curriculum.

**CVM 720 Veterinary Anatomy II (45 lecture hours + 60 lab hours=5 credits)** – The pony will serve as the primary model for studying large animal anatomy and for comparing equine anatomy and other large domestic animal anatomy with small animal anatomy. This will serve to reinforce basic anatomy similarities. Emphasis will be on the anatomy of large animals (horse, large and small ruminants, and the pig), which are vital to CVM students to matriculate through the veterinary curriculum in preparation to understand the principals of practicing veterinary medicine and entering the medical profession. Anatomical concepts will be studied of the various regions of the body and will be correlated with systemic anatomy and with topographical and other regional anatomy. To encourage student participation in the learning process, information exchange periods will accompany most labs.

**CVM 721 Veterinary Physiology II (45 lecture hours=3 credits)** - The CVM 721 course is a continuation of the study of cellular, tissue, and organ function and their control and integration in animals. Emphasis will be placed on respiratory, renal, digestive and reproductive physiology. The basic physical and chemical principles that underlie physiological processes will be described.

**CVM 723 Veterinary Infectious Disease (70 lecture hours=5 credits)** - This course will focus on the principles of infectious diseases of animals, including etiologies, pathogenesis, diagnosis, treatments, and control strategies.

**CVM 724 One Health II – Tools (15 lecture hours=1 credit)** - This course introduces the basic concepts of epidemiology and biostatistics as applied to veterinary and One Health problems. Emphasis is placed on the principles and methods of epidemiologic investigation, epidemiologic definitions, appropriate summaries and displays of data, and the use of classical statistical approaches to describe the health of populations. Topics include the dynamic behavior of disease; usage of rates, ratios and proportions, odds ratios, and other statistical tools. Various epidemiologic study designs for investigating associations between risk factors and disease outcomes are also introduced, culminating with criteria for causal inferences. The application of these disciplines in the areas of health services, screening, and environment policy are presented. The influence of epidemiology and biostatistics on legal and ethical issues are also discussed. Critical review of scientific literature will be examined. To the extent possible, we will draw from the Appalachian region for examination of issues.

**CVM 725 Clinical Skills II (30 lab hours=1 credit)** - The goal of the CVM 725 course is to provide students a means to acquire and practice crucial clinical skills that they will need in clinical rotations and in the practice environment.

**CVM 728 Professional Skills II (2 lecture hours + 26 lab hours= hours=1 credit)** - Students will be introduced to the Calgary Cambridge Guide for client communication. Students will work in a combination of small group settings and self-directed learning to build skills sets and confidence in client communication basics. Students will also work though well-being workshop to equip them in a professional program. Students will demonstrate development in communication, leadership, and professional skills related to the profession.

### **Year 1 – Semester 2 - Elective Courses**

**CVM 769-G (8 lectures= .5 credit)** This course is designed to help students develop their skills in critical thinking, communication and clinical decision-making skills. This will be accomplished by working through small group management of hypothetical and real-life veterinary cases delivered online through remote delivery platforms such as Blackboard Collaborate, Yellow dig and Vetbloom. This course will contain problem-based learning and students will revisit and apply knowledge from previous courses as well as preview the application and interpretation of content from upcoming semesters. This course will be applicable for students across multiple years in the veterinary curriculum. Students are able to take this course up to five times during semesters two through six of the veterinary curriculum. First semester students will be able to audit this course for no credit. For this course to be held, a minimum of ten students is required.

### **Year 2 – Semester 3 - Required Courses**

**CVM 730 Veterinary Pathology I (45 lecture hours=3 credits)** - The first half of this course will introduce the student to general pathology of all organ systems. The second half of this course covers systemic pathology of domestic

animals. Students will apply knowledge from previous courses (anatomy, histology, physiology, parasitology, immunology, and infectious disease) with the new knowledge of general pathology to describe the pathogenesis of and diagnose diseases.

**CVM 731 Basic Pharmacology (30 lecture hours=2 credits)** - This course covers the basic concepts of pharmacokinetics (drug absorption, distribution, metabolism and excretion) and pharmacodynamics (the action or effects of drugs on living organisms) that underlie the correct use of drugs in veterinary therapeutics. The course is designed to build a foundation of pharmacologic knowledge. Drug modes of action and physiologic effects that stem from drug actions are introduced with emphasis placed upon prototypical drugs.

**CVM 732 Toxicology (21 lecture hours + 3 lab hours=1.5 credits)** - This course is an introduction to principles of toxicology in domestic animals. The student will learn basic principles of veterinary toxicology and learn how to locate toxicological information. The course will present some common toxicants of chemicals and plants (focusing on those found in North America) affecting domestic animals and to learn basic approaches to treatment of poisoned animals.

**CVM 733 Clinical Pathology (42 lecture hours + 8 lab hours=3 credits)** - This course explains pathophysiologic mechanisms responsible for abnormal findings in hematologic, biochemical, urinalysis and cytologic tests in health and disease of animals. Students will learn a selection of appropriate diagnostic tests for various diseases and how to interpret the results of these tests. They will learn basic principles of laboratory medicine including quality control, reference intervals, specificity, sensitivity and positive and negative predictive values.

**CVM 734 One Health III – Health & Disease in Populations (30 lecture hours=2 credits)** - This course will introduce the concepts of distribution, diagnosis, treatment, and control of zoonotic diseases and transboundary diseases. It will draw from knowledge gained in with courses regarding infectious agents, immune system, pathophysiology, clinical pathology, and parasitology. The course will examine the One Health aspects of disease and the interrelatedness between individual and population human health, animal health, and the environment. Included will be student team literature search, critical literature analysis and presentations. Student will complete phase one of the United States Department of Agriculture Initial Accreditation Training.

**CVM 735 Clinical Skills III (45 lab hours=1.5 credits)** - Continued development of expertise in handling and interpretation of general physical examination findings in large animals (equine, bovine, small ruminants), exotics/birds and small animals. Continued progress toward mastery of psychomotor skills for surgery including catheter placement, closure of abdominal incisions, gloving techniques and clamping/ligating. Introduction of basic diagnostic techniques.

**CVM 736 Veterinary Nutrition (28 lecture hours + 4 lab hours=2 credits)** - This course is a comprehensive overview of domestic animal nutrition, including digestion and metabolism of nutrients, feedstuffs and feeding, ration formulation, and the interaction of nutrition and disease for small animals, horses and food animals. Clinical nutrition aspects will be focused upon.

**CVM 737 Surgery I-Introduction/Principles (15 lecture hours=1 credit)** - This course will cover principles of surgery, including basic surgical instruments and suture, wound healing, and bandaging. Select lectures will support CVM 735 Clinical Skills III.

**CVM 738 Professional Skills III (3 lecture hours + 22 lab hours=1credit)** - Students will be introduced to additional skills related to client communication, conflict management, Level 2 Financial Literacy, Case Referrals, Professional Memberships.

## Year 2 – Semester 3 - Elective Courses

**CVM 769-G Remote Delivery of Clinical Case Rounds Elective (8 lecture hours= .5 credit)** This course is designed to help students develop their skills in critical thinking, communication and clinical decision-making skills. This will be accomplished by working through small group management of hypothetical and real-life veterinary cases delivered online through remote delivery platforms such as Blackboard Collaborate, Yellow dig and Vetbloom. This course will contain problem-based learning and students will revisit and apply knowledge from previous courses as well as preview the application and interpretation of content from upcoming semesters. This course will be applicable for

students across multiple years in the veterinary curriculum. Students are able to take this course up to five times during semesters two through six of the veterinary curricula. First semester students will be able to audit this course for no credit. For this course to be held, a minimum of ten students is required.

**CVM 769-M Veterinary Disaster Medicine Elective (6 lecture hours + 8 lab hours= 1 credit)** This course will introduce the concepts and issues involved in veterinary disaster medicine at the local, national and international level. Case studies, table top exercises and hands-on laboratories will be used to train in basic response processes and techniques. Online Federal Emergency Management Agency (FEMA) courses will be used to build background training

## Year 2 – Semester 4 - Required Courses

### **CVM 740 Veterinary Pathology II (45 lecture hours=3 credits) -**

This course serves as a continuation of CVM 730: Veterinary Pathology I. The pathophysiology of diseases will be covered for the musculoskeletal, respiratory, CNS, integumentary, and ophthalmic systems of domestic animals.

**CVM 741 Clinical Pharmacology (30 lecture hours=2 credits) -** The course is designed to utilize the foundation acquired in CVM 731 (Basic Pharmacology) to understand and utilize data for specific drug classes as relates to their clinical utilities and limitations. Drug modes of action and physiologic effects that stem from drug actions are introduced with emphasis placed upon prototypical drugs.

**CVM 743 Intro to Diagnostic Imaging (45 lecture hours=3 credits) -** This introductory course covers methods of image generation, radiation safety measures and principles of image interpretation. Radiography and ultrasonography are emphasized, but computed tomography, magnetic resonance imaging, and nuclear imaging are also discussed. Lectures on basic image interpretation include normal findings and classical imaging signs of common conditions.

**CVM 744 One Health IV – The Environment (15 lecture hours=1 credit) -** This course introduces the basic concepts of the role environmental component of One Health. This will include a broad analysis of environmental impacts of livestock production, climate change, food safety and security, emerging and transboundary diseases. These will be examined across a broad spectrum of ecosystems including air, land, fresh water, and oceans. The links between the environment, human health and animal health will be highlighted including a focus on the Appalachian region. Students will complete the USDA Emerging and Exotic Diseases of Animals for Initial Accreditation Training.

**CVM 745 Clinical Skills IV (45 lab hours=1.5 credits) -** Students will continue to develop expertise in handling and interpretation of general physical examination findings in large animals (equine, bovine, small ruminants). Students will demonstrate continued progress toward mastery of psychomotor skills for surgery including aseptic technique, anesthetic monitoring, and using a spay model.

### **CVM 746 Introduction to Anesthesia & Analgesia (30 lecture hours=2 credits) -**

This course serves as an introduction to veterinary anesthesia, analgesia, and peri-operative case management. It will lay the foundation for the basic principles of anesthesia and analgesia, relying on the student to review and be familiar with basic pharmacology and physiology presented in previous semesters. This course is also a prerequisite for the Applications in Anesthesia & Analgesia course in the 5<sup>th</sup> semester of the curriculum, in which students will apply the knowledge learned in the introductory course to formulate specific anesthetic plans for various species and cases with pre-existing conditions or comorbidities.

**CVM 747 Surgery II (23 lecture hours=1.5 credits) -** This course will cover principles of surgery, including aseptic technique, fracture healing, perioperative patient care, and basic principles of surgical procedures and techniques. Application of anatomic knowledge to surgical approaches will also be included.

**CVM 748 Professional Skills IV (1 lectures + 28 lab hours=1 credit) -** Students will be introduced to more complexities related to client communication, communication regarding the physical exam of patients, second opinions and referrals, telehealth & telemedicine and mental well-being. Students will demonstrate continued development in communication, leadership, and professional skills related to the increasing complexities of the profession.

**CVM 764 Veterinary Dentistry (15 lecture hours=1 credit)** Diagnosis, treatment, prognosis, and prevention of dental diseases of the dog, cat, horse, and exotic pets.

**CVM 766 Introduction to Practice Management (15 lecture hours=1 credit)** - This course will give students a basic introductory overview of the importance of the business side of veterinary medicine and highlight how good medicine and good business go hand in hand.

#### Year 2 – Semester 4 - Elective Courses

**CVM 769-B Poultry Health (15 lecture hours=1 credit)** - This course teaches principles of Poultry Health. Students will gain knowledge of avian (poultry) clinical anatomy and physiology, nutrition, basic management, clinical signs of common diseases / disorders, generation of differential diagnoses lists, development of diagnostic plans, treatment, control, and prevention strategies. The course stresses critical thinking and problem solving.

**CVM 769-C Veterinary Oncology (15 lecture hours=1 credit)** - This course teaches principles and practice of veterinary oncology. Students will gain knowledge of the most common malignancies seen in both small and large animals, including both diagnosis and appropriate treatment options with their associated prognosis. Information will be presented in both didactic and case-based format.

**CVM 769-D Wildlife and Zoological Medicine (15 lecture hours=1 credit)** - The purpose of this “Wildlife & Zoological Medicine” course is to introduce & expose veterinary students to the diversity of this discipline of veterinary medicine. This course will expose the third year student to species within the classes of mammalian, avian, reptilian, amphibian, and fish. Each of these taxons represented include between 6000 to 20,000 species. The representative species discussed and studied in this course will enable the veterinary student to gain a basic understanding of the unique challenges and requirements of medicine and surgery involving diverse species in ex situ locations within zoological parks and in situ within natural habitats or other environments. Likewise the veterinary student will learn that (s)he will not only broaden one’s knowledge and skill base, but also potentially increase one’s income capacity by providing professional care for these species. This “Wildlife & Zoological” (W & Z) course will build on the knowledge & skills the sixth semester veterinary student has developed over the previous five semesters. This W & Z course will require a sound knowledge of parasitology, anatomy, physiology, general pathology, immunology, infectious diseases, and other disciplines of medicine and surgery. The veterinary student will be expected to be able to adapt and modify their skill sets and knowledge base to adapt to the unique characteristics of these species of other taxons of the vertebrate phylum.

**CVM 769-G Remote Delivery of Clinical Case Rounds (8 lectures= .5 credit)** This course is designed to help students develop their skills in critical thinking, communication and clinical decision-making skills. This will be accomplished by working through small group management of hypothetical and real-life veterinary cases delivered online through remote delivery platforms such as Blackboard Collaborate, Yellow dig and Vetbloom. This course will contain problem-based learning and students will revisit and apply knowledge from previous courses as well as preview the application and interpretation of content from upcoming semesters. This course will be applicable for students across multiple years in the veterinary curriculum. Students are able to take this course up to five times during semesters two through six of the veterinary curricula. First semester students will be able to audit this course for no credit. For this course to be held, a minimum of ten students is required.

**CVM 769-I Innovations in Veterinary Education (15 Lectures=1 Credit)** - Creativity is Critical to solving complex challenges and changing the world. This course contains interactive lectures and dynamic discussions that draw on the latest theories to learn the skills, techniques and strategies regarding innovations in the veterinary field. The course will focus on new equipment, the evolution of veterinary business, publications and state-of-the-art facilities and equipment available and in design.

#### Year 3 – Semester 5 - Required Courses

**CVM 750 Small Animal Medicine I (60 lecture hours=4 credits)** - Diagnosis, treatment, prognosis, and prevention of non-surgical diseases of the dog and cat. Emphasis will be on diagnosis and treatment.

**CVM 742 Theriogenology (30 lecture hours=2 credits)** - Integration of reproductive physiology, endocrinology, pathology, and pharmacology as they apply to the diagnosis, treatment and prevention of reproductive disorders of domestic animals. Normal estrous cycles, breeding management, pregnancy, dystocia management and parturition in domestic animal species will be covered. Breeding soundness in male and female animals, and normal pregnancy and production.

**CVM 752 Food Animal Production, Medicine, & Surgery I (45 lecture hours= 3credits)** - This course is designed to educate the veterinary student on the diagnosis, treatment, prognosis and prevention of non-surgical and surgical disease of food and fiber animals (bovine, ovine, caprine, porcine, camelid) and includes production animal medicine and emerging diseases.

**CVM 753 Equine Medicine & Surgery I (45 lecture hours= 3 credits)** - Clinical conditions seen in the horse, with emphasis on clinical signs, diagnosis, medical and surgical treatment, and prognosis.

**CVM 754 One Health V-Global One Health (15 lecture hours=1 credit)** – This course will introduce the concepts of global veterinary medicine, global drivers of change, the role of AVMA, US government, the United Nations, Non-governmental organizations (NGOs), private volunteer organizations (PVOs) in One Health. The course will examine the One Health aspects of global medicine including social, political, economic, legal, religious, and other components. The course will explore current and future career opportunities in global veterinary medicine.

**CVM 755 Clinical Skills V (60 lab hours=2 credits)** – Continued development of expertise in handling and interpretation of general and specific physical examination findings in large animals (equine, bovine, small ruminants) and small animals. Continuation of anesthesia and surgical skills training with introduction of anesthesia and surgery in the live canine or feline patient.

**CVM 756 Anesthesia and Analgesia II (7 lecture hours =.5 credits)** – This course serves as the application of the knowledge gained in the introduction to veterinary anesthesia and analgesia course. The focus will be on the peri-operative case management for a patient with co-existing disease(s). This course will require the student to learn both independently and within a group dynamic, by focused reading assignments, case studies, and a group presentation at the end of the course.

**CVM 757 Surgery III Soft Tissue (24 lectures = 1.5 credit)** - This course will cover clinical conditions seen in small animals with an emphasis on surgical treatment and prognosis. It will integrate and build upon the principles of surgery and surgical diseases covered in CVM 747, applying and expanding anatomical knowledge acquired, and go beyond the genetic and developmental aspects of small animal conditions to address surgical interventions to consider when conservative and medical therapies alone are not appropriate or not producing satisfactory results. Case-based examples and exercises will be utilized throughout the course to improve students' ability to apply the information to practical clinical situations.

**CVM 758 Professional Skills V (30 lab hours = 1 credit)** - Students will be introduced to skills related to supervising medical mistakes, Communication surrounding euthanasia, Financial conversations with clients, & compassion fatigue.

### **Year 3 – Semester 5 - Elective Courses**

**CVM 769-G Remote Delivery of Clinical Case Rounds (8 lectures= .5 credit)** This course is designed to help students develop their skills in critical thinking, communication and clinical decision-making skills. This will be accomplished by working through small group management of hypothetical and real-life veterinary cases delivered online through remote delivery platforms such as Blackboard Collaborate, Yellow dig and Vetbloom. This course will contain problem-based learning and students will revisit and apply knowledge from previous courses as well as preview the application and interpretation of content from upcoming semesters. This course will be applicable for students across multiple years in the veterinary curriculum. Students are able to take this course up to five times during semesters two through six of the veterinary curricula. First semester students will be able to audit this course for no credit. For this course to be held, a minimum of ten students is required.

**CVM 769-L Therio Elective (15 lecture hours + 15 lab hours= 1.5 credit)** - Advanced integration of reproductive physiology, endocrinology, pathology, and pharmacology as they apply to the diagnosis, treatment and prevention of

reproductive disorders of large animal species. Advanced normal and abnormal estrous cycles, breeding management, pregnancy, dystocia management, parturition, synchronization protocols, assisted reproductive techniques (embryo transfer, ovum pick-up, *in vitro* fertilization, intracytoplasmic sperm injection, etc.), and additional reproductive pharmacologic agents in large animal species will be covered. Advanced breeding soundness in male and female animals, and normal, abnormal pregnancy and production, and advanced procedures. Advanced topics will have a more in-depth view of the reproductive health and treatment of large animal species.

### Year 3 – Semester 6 – Required Courses

**CVM 760 Small Animal Medicine II (60 lecture hours=4 credits)**– Diagnosis, treatment, prognosis, and prevention of non-surgical diseases of the dog and cat. Emphasis will be on diagnosis and treatment.

**CVM 761 Avian and Exotic Animal Medicine (15 lecture hours=1 credit)** - The purpose of this “Avian & Exotic Animal Medicine” course is to build confidence, competence, and commitment to the species of small, “exotic” mammalian, avian, and reptilian species that are most commonly presented to clinicians in North American practices. Each of these three taxons represented include between 6000 to 8000 species. The representative species discussed and studied in this basic medicine course will enable the veterinary student to gain a basic understanding of the unique challenges and requirements of these increasingly popular, companion animals. Likewise, the veterinary student will learn that (s)he will not only broaden one’s knowledge and skill base, but also potentially increase one’s income capacity by provided professional care for these species. This “Avian & Exotics” (A&E) course will build on the knowledge & skills the sixth semester veterinary student has developed over the previous five semesters. This A & E course will require a sound knowledge of parasitology, anatomy, physiology, general pathology, immunology, infectious diseases, and other disciplines of medicine and surgery. The veterinary student will be expected to be able to adapt and modify their skill sets and knowledge base to adapt to the unique characteristics of these species of other taxons of the vertebrate phylum.

**CVM 762 Food Animal Production, Medicine, & Surgery II (45 lecture hours=3 credits)** - This course is designed to educate the veterinary student on the diagnosis, treatment, prognosis and prevention of non-surgical and surgical disease of food and fiber animals (bovine, ovine, caprine, porcine, camelid) and includes production animal medicine and emerging diseases.

**CVM 763 Equine Medicine & Surgery II (45 lecture hours=3 credits)** - This course is designed to educate the veterinary student on clinical conditions seen in the horse, with emphasis on clinical signs, diagnosis, medical, and surgical treatment, and prognosis.

**CVM 765 Clinical Skills VI (105 lab hours=3.5 credits)** - Students will be introduced to more advanced diagnostic and therapeutic procedures for small and large animals including ophthalmology procedures, ultrasonography, radiography, bandaging, semen evaluation, and epidurals using a combination of live animals, models and cadavers. Students will demonstrate continued practice with completing medical records including SOAPs, case presentations, and discharge instructions.

**CVM 767 Small Animal Surgery IV Orthopedic (22 lecture hours=1.5 credit)** This course will cover orthopedic and other clinical conditions seen in small animals with an emphasis on surgical treatment and prognosis. It will integrate and build upon the principles of surgery and surgical diseases covered in CVM 747 and CVM 751, applying and expanding anatomical knowledge acquired, and go beyond the genetic and developmental aspects of small animal orthopedic and other clinical conditions to address surgical interventions to consider when conservative and medical therapies alone are not appropriate or not producing satisfactory results. Case-based learning will be utilized throughout the course to improve students’ ability to apply the information to real-world practical clinical situations.

**CVM 768 Professional Skills VI (15 lab hours=1 credit)** - Students will be introduced to more complexities related to client communication, conflict management, financial literacy, veterinary team dynamics and engagement, Euthanasia conversations, and Medical Ethics. Students will demonstrate continued development in communication, leadership, and professional skills related to the increasing complexities of the profession.

### Year 3 – Semester 6 – Elective Courses

**CVM 769-E Nutritional Management of Small Animal Diseases (15 lecture hours=1 credit)** - This course is an introduction to clinical nutrition that will cover recognition and management of common diseases of dogs and cats in which proper diet and nutrition play important roles.

**CVM 769-F Critical Patient Management (12 lecture hours + 6 lab hours=1 credit)** This course introduces or expands upon critical care topics and techniques. Students will gain a greater depth of knowledge of the topics and apply this information during hands-on laboratory sessions. An emphasis will be placed on the individual student to prepare in advance for the lectures and labs, by reading assigned material and completing laboratory assignments. A group project will be presented by the students at the end of the course.

**CVM 769-G Remote Delivery of Clinical Case Rounds (8 lectures= .5 credit)** This course is designed to help students develop their skills in critical thinking, communication and clinical decision-making skills. This will be accomplished by working through small group management of hypothetical and real life veterinary cases delivered online through remote delivery platforms such as Blackboard Collaborate, Yellow dig and Vetbloom. This course will contain problem-based learning and students will revisit and apply knowledge from previous courses as well as preview the application and interpretation of content from upcoming semesters. This course will be applicable for students across multiple years in the veterinary curriculum. Students are able to take this course up to five times during semesters two through six of the veterinary curriculum. First semester students will be able to audit this course for no credit. For this course to be held, a minimum of ten students is required.

**CVM 769-H Advanced Equine Diagnostics (30 Lab hours-1 Credit)** - This course expands on principles introduced in the CVM 753, 763 (Equine Medicine and Surgery), CVM 715, 725, 735, 745, 755, and 765 (Clinical skills), and other courses taught in the LMU-CVM curriculum. Students will learn to use advanced diagnostic procedures and techniques commonly applied in equine medicine, surgery, and theriogenology. This course is particularly recommended for equine oriented students before the beginning of their clinical year rotation. The course is designed to allow students to become competent and confident in using a number of the diagnostic procedures and techniques encountered in equine practice. An emphasis will be placed on the individual student to prepare in advance for the labs, by reading assigned material and completing laboratory assignments.

**CVM 769-I Innovations in Veterinary Education (15 Lectures=1 Credit)** - Creativity is Critical to solving complex challenges and changing the world. This course contains interactive lectures and dynamic discussions that draw on the latest theories to learn the skills, techniques and strategies regarding innovations in the veterinary field. The course will focus on new equipment, the evolution of veterinary business, publications and state-of-the-art facilities and equipment available and in design.

**CVM769-K Food Animal Elective (30 Lab hours = 1 Credit)** - This course is designed to increase expertise in certain food animal skills, expose food animal students to techniques and skills not previously taught in prior courses or labs and offers opportunity to increase their food animal problem solving and critical thinking skills. This course is primarily directed toward students that wish to specialize in food animal practice or intend for food animal practice to be the majority of their overall practice. Dairy, beef and small ruminants topics and exercises will be conducted and will include at least one "outbreak" investigation.

#### **Year 4 – Semesters 7 and 8 Clinical Rotation – Required Courses**

**CVM 770 Small Animal General Practice (4 weeks/4 credits)** - Course CVM 770 consists of supervised clinical instruction in a selected, pre-approved, high quality, small animal general practice (canine, feline, pocket pets). Students see a wide variety of medical and surgical cases and are active participants in their diagnostic and therapeutic management, to include documentation of findings and care in problem-oriented medical records and performance of clinical procedures. Prerequisite: successful completion of pre-clinical course work, clinical year standing.

**CVM 771 a-b Specialty Practice Clinical Rotation (4 weeks/4 credits)** - Course CVM 771 consists of supervised clinical instruction in a selected, high quality, specialty practice focusing on small animal species, primarily canine and feline. Instruction will take place in practices with board certified internists, radiologists, surgeons, anesthesiologists, or other specialists, and/or access to those specialists. Students are active participants in diagnostic and therapeutic

management of a wide variety of cases with instructive pathophysiological learning issues requiring appropriate medical and/or surgical management in veterinary advanced care, emergency and critical care situations.

Or

**CVM 771S Specialty Practice Clinical Rotation “Selective” (4 weeks/4 credits)** - Course CVM 771S consists of supervised clinical instruction in a selected, high quality, specialty practice. Species of focus or interest can include: canine, feline, lab animal, exotic, zoological, equine and/or large animal depending on the interest and career goals of the student. Instruction will take place in practices with board certified internists, radiologists, surgeons, anesthesiologists, or other specialists, and/or access to those specialists. Students are active participants in diagnostic and therapeutic management of a wide variety of cases with instructive pathophysiological learning issues requiring appropriate medical and/or surgical management in veterinary advanced care, emergency and critical care situations.

**CVM 772 Small Animal Primary Care (4 weeks/4 credits)** - Course CVM 772 consists of supervised clinical instruction in the medical and surgical areas of a busy community shelter practice. Students perform medical, dental and surgical treatments for the benefit of animals owned by the shelter. The LMU-CVM faculty shelter veterinarian works with the shelter medical and surgical teams in the supervision of students. Students perform physical examinations on dogs and cats, and discuss their findings with veterinarians and staff. Students are intimately involved in providing medical, surgical and preventive care to shelter animals. Students are involved in the preparation and performance of elective surgeries (such as ovariohysterectomy, orchiectomy, and dentistry) on dogs and cats under the supervision of veterinarians and staff. Students take part in discussions and/or demonstrations in regard to animal behavior problems and potential solutions; including participation in medicine and surgery rounds. Students make formal rounds presentation to other students and staff during the course.

**CVM 773 Diagnostic Veterinary Medicine (4 weeks/4 credits)** - The CVM 773 course is a 4-week rotation during which the students will receive senior level training in diagnostic pathology and 10 ancillary diagnostic services. The ancillary diagnostic services are; bacteriology, virology, molecular biology, serology, toxicology, clinical receiving, histology, parasitology, clinical pathology, and epidemiology. The course is composed of lecture/cooperative/ active /group and self- learning morning sessions. The students will spend the afternoon sessions performing post mortem examinations on the University of Kentucky Veterinary Diagnostic Laboratory (UKVDL) necropsy floor or will work independently on allied diagnostic services assignments. The students will also give diagnostic pathology case presentations on UKVDL case submissions.

**CVM 774 Large Animal DVTC Rotation (4 weeks/4 credits)** - Students will be introduced to diagnostic and therapeutic procedures for large animals including internal medicine cases, bovine lameness, herd and flock health consultation and routine procedures, ophthalmology procedures, diagnostic imaging, equine lameness examination, reproductive technology, bandaging and wound care, dental procedures, anesthesia, and general surgical procedures using a combination of live animals, models, and cadavers. Students will demonstrate continued communications skills development including communication with owners through written discharge instructions and communication with colleagues via referral letters.

**CVM 776 NAVLE Administration (off 3 weeks/3 credits)** - Course CVM 776 is a Required Course offered in fall semester. Students will prepare and sit for the North American Veterinary Licensing Exam (NAVLE®). Students will conduct independent studies and review in order to prepare for the NAVLE® by completing 80% of an approved NAVLE prep course. Students will take the NAVLE® at the location that they applied for during the summer June-August application window.

**CVM 777 Clinical Year Assessment (1 week/1 credit)** - Course CVM 777 is a Required Course offered in the spring semester, after rotations are completed and prior to commencement. Students will return to the LMU campus for a debriefing of their clinical year experience. Students will share clinical year experiences with other students and faculty. Topics of interest to the graduating veterinarian will be discussed and explored including: completing various surveys, financial aid separation, debt repayment methods and commencement celebration.

**Year 4 – Semesters 7 and 8 Clinical Rotation – Elective Courses**

**CVM 775 Mixed Animal Practice Clinical Rotation (4 weeks/4 credits)** - Course CVM 775 consists of supervised clinical instruction in a selected mixed animal practice (canine, feline, beef, dairy, equine, small ruminants, swine). Students are active participants in diagnostic and therapeutic management of a wide variety of cases with instructive pathophysiological learning issues requiring appropriate medical and/or surgical management in veterinary care and emergency situations.

**CVM 780 a-e Elective Distributive Courses (4 weeks/4 credits)** - Course CVM 780 consists of supervised clinical instruction in high quality learning experiences available at institutions and practices in North America and around the world, to include specialty practices (such as medicine, surgery, cardiology, dermatology, neurology, oncology, ophthalmology), species-specific practices, other accredited Colleges of Veterinary Medicine, zoos, and other LMU-CVM approved public and private biomedical institutions. Students are active participants in their elective rotations, participating in the wide variety of cases with instructive learning issues and situations they will be exposed to. Elective clinical rotations can either be selected from a preapproved list or a proposal can be submitted and approved through the Clinical Relations Office on E\*Value.

**CVM 781 a-b Elective Externship (2 weeks/4 credits)** - Course CVM 781 consists of supervised clinical instruction in high quality learning experiences available at institutions and practices in North America and around the world, to include specialty practices (such as medicine, surgery, cardiology, dermatology, neurology, oncology, ophthalmology), species-specific practices, other accredited Colleges of Veterinary Medicine, zoos, and other LMU-CVM approved public and private biomedical institutions. Students are active participants in their rotations, participating in the wide variety of cases with instructive learning issues and situations they will be exposed to. Elective externship clinical rotations are submitted and approved through the Clinical Relations Office on E\*Value.

**CVM 782 NAVLE Preparation Course (4 weeks/4 credits)** - This course is offered to students in the fourth year of the curriculum as an elective to assist in preparation for the North American Veterinary Licensing Examination. Course design involves a multifaceted approach to content delivery through didactic lectures, review sessions, case-based problem solving, online educational resources/testing modules, and structured self-directed study. The course includes testing exercises of varying difficulty, including content and environment comparable board examination simulations. Students will have access to online educational materials and learning tools provided by the Zuku NAVLE® preparation program. Course director and instructors will track individual student progress and testing outcomes through analysis of performance metrics provided by the Zukureview™ exam service. The course combines daily morning lectures and classroom exercises, content/topics organized by animal species, with assignments and afternoon self-directed study periods spanning approximately 4 weeks.

**CVM 783 DVTC Small Animal Elective (4 weeks/4 credits)** – Students will be introduced to more advanced diagnostic and therapeutic procedures for small animals including ophthalmology procedures, diagnostic imaging, bandaging and wound care, dental procedures, anesthesia, and general surgical procedures using a combination of live animals, models, and cadavers. Students will demonstrate continued communications skills development including communication with owners through oral histories and written discharge instructions and communication with colleagues via referral letters.

**CVM 784 DVTC Theriogenology Elective (4 weeks/4 credits)** - Students will be introduced to advanced theriogenology techniques and theories including, but not limited to advanced rectal palpation, breeding management, AI, embryo flushing/handling, twin reduction methods in horses, advanced pregnancy ultrasound including fetal sexing, semen collection, semen freezing, semen shipping, advanced semen evaluation, and advanced male evaluation. Students will demonstrate continued communications skills development including communication with owners through written discharge instructions and communication with colleagues via referral letters.

**CVM 785 Rural Practice Workshop (6 weeks/ .5 credit)** – The Rural Practice Workshop supports the LMU and CAHA mission of improving animal and human health in Appalachia, and addressing the rural veterinary shortage throughout Appalachia. Students interested in rural practice will gain additional knowledge about practice management, helpful reference resources, skills for working successfully in rural Appalachia, and mentorship. The program consists of 6 webinars that are remotely accessible by participating students. Webinar speakers will include members from LMU-CVM's faculty with experience in rural practice ownership and logistics. Speakers will also

include veterinarians that are currently practicing in rural Appalachia, professional consultants, and representatives from prominent veterinary supply distributors.

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