

## VETERINARY CAREERS I AND II

*Veterinary Careers I & II* are designed as an extended laboratory experience at the student's choice of clinical site; usually clinics, animal hospitals, or research laboratories, designed to provide students the opportunity to assume the role of a veterinary assistant and practice technical skills previously learned in the classroom, including information on the health care system and employment opportunities at a variety of entry levels, an overview of the health care delivery systems, health care teams and legal and ethical considerations. It prepares students with the knowledge, skills and attitudes essential for providing basic care in extended care facilities, hospitals and home health agencies under the direction of licensed veterinarians. In addition students will learn skills for monitoring and caring for animals before and after surgery, maintain and sterilize surgical instruments, clean and disinfect kennels and operating rooms, provide emergency first aid to animals, give medication, do routine lab tests, feed and bathe animals, and collect fluid or tissue samples. This course also provides students with the knowledge, attitudes, and skills needed to make the transition from school to work in health science careers, including self-analysis to aid in career selection, job seeking and job maintenance skills, personal management skills, and completion of the application process for admission into a post-secondary program. Participation in HOSA or FFA encourages development of leadership, communication, community service and career related skills

- DOE Code: 5211 & 5212
- Recommended Grade Level: 11-12
- Recommended Prerequisites: Health Science Education I or Veterinary Careers I
- Credits: 3 credits per semester, maximum of 6 credits
- Counts as a Directed Elective or Elective for the General, Core 40, Core 40 with Academic Honors and Core 40 with Technical Honors diploma

### Application of Content

Intensive laboratory applications are a component of this course and may be either school based or work based or a combination of the two. Work-based learning experiences should be in a closely related industry setting. Instructors shall have a standards-based training plan for students participating in work-based learning experiences

### Career and Technical Student Organizations (CTSOs)

Career and Technical Student Organizations are considered a powerful instructional tool when integrated into Career and Technical Education programs. They enhance the knowledge and skills students learn in a course by allowing a student to participate in a unique program of career and leadership development. Students should be encouraged to participate in HOSA and/or FFA, the CTSOs for the most closely related subject matter areas.

## Content Standards

### Domain I: Office and Hospital Procedures

#### Core Standard 1

*Student should be proficient at requisite clerical and administrative skills associated with front desk support of the veterinary setting.*

#### Standards

Vet-1.1 Greet Clients and demonstrate proper appointment scheduling and make appointments

Vet-1.2 Prepare appropriate certificates for client' signature and perform basic veterinary medical record keeping procedures

Vet-1.3 Admit patient following the established policies of the veterinary setting

Vet-1.4 Demonstrate proficiency with typing and computer skills

Vet-1.5 Utilize basic medical terminology

Vet-1.6 Perform basic invoicing, billing, and payment on account procedures

## **Core Standard 2**

*Maintain procedures for basic care, cleanliness, and maintenance of a veterinary facility*

### **Standards**

Vet-2.1 Inventory supplies on a regular schedule and restock shelves

Vet-2.2 Maintain x-ray, surgery, and laboratory logs

Vet-2.3 Perform basic filing and retrieving of medical records, radiographs, lab reports, etc.

Vet-2.4 Demonstrate knowledge of basic cleaning techniques of animal kennels and bedding, examination rooms, hospital facilities, and surgical suites

Vet-2.5 Practice procedures for care, maintenance, and use of diagnostic, therapeutic, surgical, and anesthetic equipment and supplies

## **Domain II. Communication and Client/Staff Conduct**

### **Core Standard 3**

*Develop effective client communication skills*

#### **Standards**

Vet-3.1 Answer and direct phone calls appropriately

Vet-3.2 Recognize and respond properly to veterinary medical emergencies, by notifying the appropriate personnel

Vet-3.3 Request records and information from other veterinary facilities

Vet-3.5 Describe the roles and responsibilities of each member of the veterinary health team

### **Core Standard 4**

*Demonstrate professional conduct at the workplace and an understanding the significant work being performed on a daily basis*

#### **Standards**

Vet-4.1 Demonstrate professional and appropriate appearance and language in the workplace

Vet-4.2 Practice techniques for communicating with the veterinary medical team and client

Vet-4.3 Understand ethical conduct in relationship to the day to day operations of a vet hospital

Vet-4.4 Recognize the importance of animals in our society and explain the human-animal bond

Vet-4.5 Identify trends, issues, and historical events that have influenced animal use and care

Vet-4.6 Describe the legal aspects of animal welfare and animal rights; in addition, evaluate the principles of veterinary medical ethics

## **Domain III. Pharmacy and Pharmacology**

### **Core Standard 5**

*Demonstrate knowledge and understanding of pharmacy and pharmacology commonly performed in veterinary facilities*

#### **Standards**

Vet-5.1 Know the Legal requirements and procedures for preparing, storing, and dispensing pharmacological and biological agents

Vet-5.2 Classify the common drugs used in veterinary medicine know the toxicology of the commonly used drugs and identify the contraindications, side effects, and normal and abnormal drug reactions and interactions

Vet-5.3 Use basic medical terminology and be able to simplify the terminology for the client

Vet-5.4 Understand the various routes of administration of pharmacological and biological agents (including vaccines) and identify the equipment used to administer medications, including restraints

### **Core Standard 6**

*Interpret and fill prescriptions and perform inventory control on medications*

#### **Standards**

Vet-6.1 Label and package dispensed drugs correctly

Vet-6.2 Store, safely handle and dispose of biological and therapeutic agents, pesticides, and hazardous waste

Vet-6.3 Explain the proper methods of disposal for syringe, needles, and other sharp objects

Vet-6.4 Perform inventory control procedures including restocking supplies and checking expiration dates

## **Domain IV. Examination Room Procedures**

### **Core Standard 7**

Practice restraining and handling technical skills through behavioral observation when delivering quality care

#### **Standards**

Vet-7.1 Develop knowledge and practical skills in the area of animal behavior and communication

Vet-7.2 Recognize behaviors and communications related to illness and reproduction

Vet-7.3 Place and remove small animals from cages and place and restrain small animals on tables and floor

- Apply dog and cat safety muzzle
- Apply Elizabethan collar
- Apply restraint pole
- Demonstrate standing, sitting and lateral restraint positions
- Recognize when to alter normal restraint for compromised patients in the exam room (i.e. Ringworm, Contagious diseases, Ectoparasite infestation) and describe appropriate action or personnel to notify

Vet-7.4 Restrain birds, rabbits, pocket pets, and exotics (Optional)

Vet-7.5 Restrain large animals (Optional)

- Halter, tie, and lead horses
- Restrain cattle & horses
- Apply twitch
- Apply nose tongs/ leads
- Restraint of sheep & swine
- Load large animals

### **Core Standard 8**

*Develop wellness protocols, which include performing basic preventative health and nutrition procedures*

#### **Standards**

Vet-8.1 Determine and record temperature, pulse, respiration, body condition score, and weight of patients

Vet-8.2 Trim nails (Required: Cats and Dogs. Optional: Birds and Exotics)

Vet-8.3. Express anal sacs using the external method

Vet-8.4. Identify external parasites: mites, lice, fleas, and ticks

Vet-8.5. Recognize AKC dog breeds and CFA cat breeds

Vet-8.6. Be able to properly identify the gender of small animal species, particularly felines

Vet-8.7. Perform exam room grooming: i.e. trimming nails, external ear canal cleaning, etc.

Vet-8.8. Be familiar with small animal nutritional requirements, pet food labeling standards, dry matter basis calculations, and the differences between pet food products

## **Domain V. Small Animal Nursing (Large Animal Nursing--Optional)**

### **Core Standard 9**

*Determine and proceed with the appropriate safety and sanitation protocol for a given situation in the veterinary practice*

#### **Standards**

Vet-9.1 Demonstrate knowledge of basic normal and abnormal animal behavior and describe the characteristics and signs of a healthy animal

Vet-9.2 Utilize patient & personnel safety measures and discuss emergency procedures

Vet-9.3 Define zoonosis and identify potential zoonotic diseases

Vet-9.4 Practice isolation procedures

Vet-9.5 Define the process of hazardous waste disposal

Vet-9.6 Describe and perform basic sanitation

Vet-9.7 Be familiar with OSHA regulations and understand the types of hazards common in the veterinary practice

## **Core Standard 10**

*Students will demonstrate basic animal care and nursing*

### **Standards**

Vet-10.1 Perform and document initial and ongoing evaluations of physical, behavioral, nutritional, and environmental status of animals to provide for optimal animal/client safety and health

- Animal assessment and monitoring techniques, including but not limited to surgery, hospitalization, physical exam, and excluding anesthetic monitoring
- Understand the principles of animal behavior
- Demonstrate a basic understanding of common diseases and medical conditions and recognize signs and symptoms that may indicate disease or illness

Vet-10.2 Perform animal nursing and clinical diagnostic procedures (including but not limited to post-operative care, catheterization, wound management, blood pressure measurement, electrocardiography) to aid in diagnosis, prognosis, and implementation of prescribed treatments

Clinical diagnostic procedures, including but not limited to blood pressure measurement, electrocardiography, tonometry

- Monitor/restrain patients for fluid therapy and record observations
- Demonstrate understanding of treatment plan

Vet-10.3 Animal nursing procedures including but not limited to pre/post-operative care technique, casting, bandaging

- Apply and remove bandages to healthy animals - (equine leg and tail wraps - optional)
- Perform hand pilling (dog, cat)
- Perform therapeutic bathing, basic grooming, and dipping of small animals
- Clean external ear canals
- Prepare food & prescription diets - be aware of any special dietary needs

Vet-10.4 Practice animal first aid, triage, and emergency/critical care techniques

Vet-10.5 Provide a safe, sanitary, and comfortable environment for animals to ensure optimal healthcare and client/personnel safety.

- Animal handling and restraint techniques
- Animal husbandry
- Disease control and prevention techniques (including but not limited to vaccination, wellness care, herd health)
- Facility cleaning and disinfection techniques

Vet-10.6 Demonstrate an understanding of the euthanasia and post mortem care

## **Domain VI. Surgical Preparation and Assisting**

### **Core Standard 11**

*Students will demonstrate basic surgical preparation and assisting*

### **Standards**

Vet-11.1 Prepare and maintain the surgical environment, equipment, instruments, and supplies to meet the needs of the surgical team and patient.

- Practice sterilization techniques and quality assurance for equipment and supplies

Vet-11.2 Prepare patient for procedure, including surgical site scrub and patient positioning

- Perform patient positioning techniques including but not limited to diagnostic imaging, surgery

Vet-11.3 Function as a sterile surgical assistant, including but not limited to aiding in tissue handling, suturing, instrument handling, to ensure patient safety and procedural efficiency

- Practice aseptic technique
- Understand and perform basic surgical procedures
- Recognize suturing methods and techniques
- Maintain fluid balance and therapy

Vet-11.4 Function as a circulating (non-sterile) surgical assistant to ensure patient safety and procedural efficiency.

- Practice sterile and circulating (non-sterile) surgical assisting procedures and instrumentation

## **Core Standard 12**

*Maintain facility and equipment cleanliness*

### **Standards**

Vet 12.1 Maintain proper operating room conduct and asepsis

Vet 12.2 Perform post-surgical clean up

Vet 12.3 Fold surgical gowns and drapes

Vet 12.4 Have knowledge of:

- Surgical equipment
- Surgical room and prep area
- Instrument cleaning and care
- Proper disposal of hazardous medical wastes

## **Domain VII. Laboratory Procedures**

### **Core Standard 13**

*Understand procedures performed in the laboratory to run various tests in assisting the evaluation, diagnosis, and treatment of the veterinary patient*

### **Standards**

Vet-13.1 Collect, prepare, and maintain specimens for in-house or outside laboratory evaluation; in addition, practice sample collection, preparation, storing, and shipping techniques

- Collect voided urine samples
- Determine physical properties of urine including color and clarity
- Assist in the collection of blood samples for procedures
- Collect voided fecal samples for examination
- Prepare fecal flotation solutions and set up fecal flotations and direct smears
- Assist the DVM or veterinary technician in necropsy procedures
- Explain how to handle rabies suspects & samples safely
- Handle disposal of deceased animals

Vet-13.2 Maintain laboratory equipment and related supplies to ensure safety of operation and quality of results

Vet-13.3 Evaluate information obtained from gross observation and microscopic examinations as well as interpret test results as they pertain to animal health

Vet-13.4 Understand laboratory diagnostic principles and procedures (e.g., hematology, cytology, urinalysis, serology, immunology, microbiology, parasitology)

Vet-13.5 Ensure all laboratory results are accurately recorded, stock laboratory supplies, and file laboratory reports

## **Domain VIII. Radiology & Ultrasound Imaging**

### **Core Standard 14**

*Understand safety, procedures, maintenance, and operation of imaging while demonstrating patient restraint and positioning methods*

### **Standards**

Vet 14.1 Assist the veterinarian and/or the veterinary technician in the completion of diagnostic radiographs and ultrasound including the restraint and positioning of patients

Vet 14.2 Produce diagnostic images following safety protocols for operator and patient.

Vet 14.3 Use hand **OR** automatic processing in darkroom

Vet 14.4 Maintain imaging equipment and related materials to ensure safety of operation and quality of results.

Vet 14.5 Know safety techniques for handling processing chemicals

## **Domain IX. Medical Terminology and Mathematics**

### **Core Standard 15**

*Communicate the importance of medical terminology, discover their meanings, and demonstrate the ability to use terms correctly*

### **Standards**

Vet-15.1 Analyze veterinary terms as to their meanings and recognize common prefixes, suffixes, and roots

Vet-15.2 Develop appropriate use of directional terms

- Vet-15.3 Describe anatomical structures and body systems by using appropriate medical terminology  
Vet-15.4 Recognize, pronounce, spell, and define medical terms relating to diagnosis, pathology, and treatment of animals

### **Core Standard 16**

*Apply mathematical skills necessary to complete tasks in veterinary setting*

#### **Standards**

- Vet-16.1 Demonstrate mathematical skills for client assessment and treatment  
Vet-16.2 Convert, calculate, and analyze problems as it relates to veterinary medicine  
Vet-16.3 Interpret data such as tables, charts, and graphs

## **Domain X Veterinary Foundational Knowledge**

### **Core Standard 17**

*Student must possess and demonstrate core veterinary foundational knowledge*

#### **Standards**

- Vet -17.1 Identify the basic anatomy and physiology of animals
- Know the medical terminology relating to the organism and the position
  - Understand what normal physiology is including theriogenology (reproduction)

### **Core Standard 18**

*Evaluate animal diseases and parasites as they influence animal well-being*

#### **Standards**

- Vet-18.1 Identify factors that influence the health of animals such as location, age, genetics and inherited disease to a particular species  
Vet-18.2 Describe the process of immunity and disease transmission  
Vet-18.3 Identify pathogens and describe the effects that diseases have on various animals and their body systems  
Vet-18.4 Describe how parasites are transmitted through the life cycle and the effect they have on the host  
Vet-18.5 Explain the methods of prevention, control, and treatment for diseases and parasites

### **Core Standard 19**

*Understand the functions of nutrients in ruminant and non-ruminant animal digestive process in maintain healthy animals*

#### **Standards**

- Vet -19.1 Discuss and identify the process of digestion in ruminant and non-ruminant animals  
Vet-19.2 Identify types and sources of nutrients available  
Vet-19.3 Identify animal dietary needs  
Vet-19.4 Calculate energy requirements and formulate rations  
Vet-19.5 Discuss feeding practices and disorders associate with nutrition

## **Common Core Literacy Standards for Technical Subjects**

### **Reading Standards for Literacy in Technical Subjects 11-12**

The standards below begin at grade 11 and define what students should understand and be able to do by the end of grade 12. The CCR anchor standards and high school standards in literacy work in tandem to define college and career readiness expectations – the former providing broad standards, the latter providing additional specificity.

#### **Key Ideas and Details**

- 11-12.RT.1 Cite specific textual evidence to support analysis of technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.
- 11-12.RT.2 Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.
- 11-12.RT.3 Follow precisely a complex multistep procedure when performing technical tasks; analyze the specific results based on explanations in the text.

### **Craft and Structure**

- 11-12.RT.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific context relevant to *grades 11-12 texts and topics*.
- 11-12.RT.5 Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.
- 11-12.RT.6 Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.

### **Integration of Knowledge and Idea**

- 11-12.RT.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.
- 11-12.RT.8 Evaluate the hypotheses, data, analysis, and conclusions in a technical subject, verifying the data when possible and corroborating or challenging conclusions with other sources of information.
- 11-12.RT.9 Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.

### **Range of Reading and Level of Text Complexity**

- 11-12.RT.10 By the end of grade 12, read and comprehend technical texts in the grades 11-CCR text complexity band independently and proficiently.

### **Writing Standards for Literacy in Technical Subjects 11-12**

The standards below begin at grade 11 and define what students should understand and be able to do by the end of grade 12. The CCR anchor standards and high school standards in literacy work in tandem to define college and career readiness expectations – the former providing broad standards, the latter providing additional specificity.

### **Text Types and Purposes**

- 11-12.WT.1 Write arguments focused on *discipline-specific content*.
- 11-12.WT.2 Write informative/explanatory texts, including technical processes.
- 11-12.WT.3 Students will not write narratives in technical subjects. *Note: Students' narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In technical, students must be able to write precise enough descriptions of the step-by-step procedures they use in their technical work that others can replicate them and (possibly) reach the same results.*

### **Production and Distribution of Writing**

- 11-12.WT.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
- 11-12.WT.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.
- 11-12.WT.6 Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.

### **Research to Build and Present Knowledge**

- 11-12.WT.7 Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.
- 11-12.WT.8 Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation

11-12.WT.9 Draw evidence from informational texts to support analysis, reflection, and research.

**Range of Writing**

11-12.WT.10 Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.