VSCP
Veterinary Science Certificate Program

Veterinary Science Lessons	Knowledge and Skills	Student Expectations	CVA Skill or Competency (TVMA)
LIVESTOCK PRODUCTION			
Veterinary Assistant; Animals & Society (1, 1-1, 1-2, 1-3)	(1) The student learns the employability characteristics of a successful employee	(A) Identify career development and entrepreneurship opportunities in the field of animal systems	
The Profession of Veterinary Medicine; The Veterinary Assistant; Animals & Society (1, 1-3)		(B) Apply competencies related to resources, information, intrapersonal skills, and system of operations	
Practice Management (2)		(C) Demonstrates knowledge of personal and occupational safety and health practices in the workplace	
Practice Management (2)		(D) Identify employer's expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills	

Animal & Society (1-3)	(2) The student demonstrates technical skills relating to the interrelated human, scientific, and technological dimensions of animal systems	(A) Assess the importance of the United States impact on world commodity markets	
Genetics; Breeds of Livestock; Nutrition, Management of Livestock (4-4, 4-7, 5-3)	(3) The student performs technical skills related to livestock production	(B) Apply the principles of livestock breeding and nutrition in predicting the impact of current advances in genetics	
Poisonous Plants (11-5)		(C) Examine the interrelationship of plants and animals	
Records & Record Keeping (15-10)		(A) Gather performance data	
ASSISTING WITH EXAMINATIONS & TREATMENTS			
Laboratory Aids & Examinations; Principles & Methods of Disease Control; Sterilization & Disinfection; Assisting with Surgery; Production Practices (7,8,12,13,14,15)		(B) Describe common veterinary procedures and skills	
Handling & Restraining Animals (6)		(C) Practice proper animal restraint techniques.	
Determining the Age of Animals; Breeds of Doe & Cats; Breeds of Livestock (4-5,4-6,4-7)		(D) Demonstrate identification techniques	
Anatomy & Physiology of Animals (4-1)	(4) The student explains anatomy and physiology related to nutrition, reproduction, health and treatment of animals	A) Explain the skeletal, muscular, respiratory, reproductive, and circulatory systems of animals	

Reading Animal Behavior; Vital Signs (4-2)		(B) Evaluate vital signs and behavior	
Anatomy & Physiology of Animals (4-1)		(A) Describe the digestive system	
Essential Food Nutrients, Nutrient & Management of Livestock (5-1, 5-3)	(5) The student determines nutritional requirements of plants and non-ruminant animals including poultry	(B) Identify sources of nutrients and classes of feed	
Essential Food Nutrients (5-1)		(C) Identify vitamins, minerals, and feed	
Animal Nutrition (5)		(D) Formulate rations	
Nutritional Diseases		(E) Discuss feeding practices and feed quality	
ANATOMY, PHYSIOLOGY, & REPRODUCTION			
Anatomy & Physiology of Animals (4-1), (4-4)	(6) The student explains animal genetics and reproduction	(A) Describe the reproductive system	
Anatomy & Physiology of Animals (4-1), (4-4)		(B) Explain the use of genetics in animal breeding	

Collecting & Handling & Semen; Artificial Insemination; Reproduction & Rectal Palpation in Cattle (15-5, 15-6, 15-7)		(C) Identify systems of animal breeding	
Collecting & Handling Semen; Artificial Insemination ;Reproduction Rectal Palpation in Cattle; Assistance at Birth- Clinical; Weaning Calves (15-5, 15-6, 15-7, 15-B, 15-9)		(D) Research current and emerging technologies in animal reproduction	
INFECTIOUS DISEASES			
Animal Health; Infectious Diseases; Non-Infectious Diseases (9, 10, 11)	(7) The student identifies animal pets and diseases.	(A) Describe the role of bacteria, fungi, viruses, genetics, and nutrition in disease	

Principles & Methods of Disease Control (12)		(B) Identify methods of disease control, prevention, and treatment .	
ECONOMICS & MARKETING			
Marketing Animals (15-3)	(8) The student knows the factors Impacting comm oddity prices and costs	(A) Evaluate the relationship between commodity and markets .	
Animal Nutrition (5)		(B) Formulate rations based on least-cost factors.	
Genetics; Essential Food Nutrients (4-4, 5-1)		(C) Design and conduct experiments to support known principles of genetics and feed efficiency	
Records & Record Keeping (15-10)	(9) The student develops an improved supervised culture experience program as it relates to agriculture, food, and natural resources	(B) Apply proper record keeping skills as they relate to a supervised experience	
Records & Record Keeping (15-10)		(C) Observe and use a customized record-keeping system for the individual supervised	

SMALL ANIMAL MANAGEMENT			
Animals & Society (1-3)	(1) The student describes the importance of responsible animal ownership	(A) Explain the domestication and use of small animals	
Animals & Society (1-3)		(B) Identify the influence small animals have on society	
Animals & Society (1-3)		(C) Describe the importance of small animal industry	
Animals & Society (1-3)		(D) Describe the obligations and benefits of small animal ownership	
Introduction to Handling & Restraining Animals (6-1)	(2) The student learns the hazards associated with working in the small animal industry	(E) Discuss the use and services provided by small animals	
DISEASES COMMON TO HUMANS & ANIMALS			
Food & Animal Diseases (9-3, 9-4)		(B) Identify diseases that can be transmitted from small animals to humans	
Prevention (12·1)		(C) Describe methods of preventing the spread of disease	
Introduction to Handling & Restraining Animals; Handling & Restraining Dogs & Cats, Handling & Administering Medications-Clinical (6-1, 6-3, 6-4, 6-5)		(D) Follow guidelines for safety when handling dangerous chemicals and when working with small animals	
Laboratory Aids & Examination (8-1)		(E) Demonstrate the proper use of laboratory equipment	

ANIMAL RIGHTS & WELFARE			
Animal Welfare Regulations (16-131)	(3) The student evaluates current topics in animal rights and animal welfare	(A) Compare and contrast animal rights and welfare	
Animal Welfare Regulations (16-131)		(B) Research important persons, organizations, and groups involved in animal rights	
Animal Welfare Regulations (16-131)		(D) Analyze current issues in animal rights and animal welfare	
Breeds of Dogs & Cats, Breeds of Livestock (4-6, 4-7)	(4) The student knows the care and management requirements for a variety of small animals	(A) Discuss the physical characteristics for each species studied	
Breeds of Dogs & Cats, Breeds of Livestock (4-6, 4-7)		(B) List the breeds or types of each species studied	
Bedding & Housing for Patients-Clinical (3-3)		(C) Discuss the habitat, housing, and equipment needs for each species studied	
Principles & Methods of Disease Control (12)		(E) Explain health maintenance in each species studied, including the prevention and control of diseases and parasites	

Introduction to Handling & Restraint in Animals (6-1)		(F) Describe and practice common methods of handling each species studied	
Fecal, Blood, & Urine Examinations		(G) Use available laboratory equipment to perform procedures such as fecal test, blood testing, and basic grooming procedures	
Bacteriologic Tests (8-1, 8-2)			
THE PROFESSION OF VETERINARY MEDICINE			
The Veterinary Assistant; Animals & Society (1-1,1-2,1-3)	(5) The student examines career opportunities in small animal care	(A) Identify, describe, and compare career opportunities in small animal care management	
The Veterinary Assistant; Animals & Society (1-1,1-2,1-3)		(B) Describe the nature of the work, salaries, and educational requirements for careers in small animal care.	
The Veterinary Assistant; Animals & Society (1-1,1-2,1-3)	(6) The student learns the employability characteristics of a successful employee	(A) Identify career development and entrepreneurship opportunities in the field of agricultural enterprises	
Office Procedures Clinical, Client Communications-Clinical; Employee Communications-Clinical (2-1,2-2, 2-3)		(B) Apply competencies related to resources, information, intrapersonal skills, and system of operations in special agricultural enterprises	
Clinic Infectious Disease Control; Clinical; Storage of Foods-Clinical (2-4, 2-5)		(C) Demonstrate knowledge of personal and occupational safety and health practices In the work place.	

Office procedures; Clinical; Client Communications; Clinical; Employee Communications-Clinical (2-1, 2·2, 2-3)		(D) Identify employer's expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.	
EQUINE SCIENCE			
Essential Food Nutrients ; Nutrient & Management of Livestock (5·1, 5-3)	(2) The student knows how to provide proper nutrition using accepted protocols and processes to maintain animal performance	(A) Determine nutritional requirements of horses	
		(B) Describe the anatomy and physiology of horses	
Anatomy & Physiology of Animals; Breeds of Livestock (4-1, 4-7)		(C) Explain methods of maintaining horse health and soundness.	
Bedding & Housing for Patients-Clinical (3-3)	(3) The student analyzes equine science as it relates to the management of horse	(A) Select equipment and facilities of horses	
Handling & Restraining Livestock (6-4)		(B) Demonstrate methods of handling horse safety	
Genetics; Breeds of Livestock; Collecting & Handling Semen; Artificial Insemination (4-4, 4-7, 15-5, 15-6)		(C) Identify the procedures for breeding horses .	
Welfare Regulations	(4) The student compares and contrasts issues affecting the equine industry		
The Profession of Veterinary Medicine; The Veterinary Assistant (1-1, 1-2)	(5) The student learns the employability characteristics of a successful employee.	(A) Identify career development and entrepreneurship opportunities in the field of equine science	
Office Procedures-Clinical; Client Communications-Clinical; Employee Communications -Clinical (2-1, 2-2, 2-3)		(B) Demonstrate competencies relates to resources, information, interpersonal skills, and systems of operations in equine science	
Practice Management (2-1)		(C) Demonstrate knowledge of personal and occupation, safety, and health practices in the workplace	

Office Procedures-Clinical; Client Communications-Clinical; Employee Communications-Clinical (2·1, 2-2, 2·3)		(D) Identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.	
ADVANCED ANIMAL SCIENCE			
The Profession of Veterinary Medicine; The Veterinary Assistant (1-1, 1-2)	(4) The student evaluates the employability characteristics of an employee	(A) Identify career development and entrepreneurship opportunities in the field of animal systems	
Office Procedures--Clinical; Client Communications-Clinical; Employee Communications-Clinical (2·1, 2·2, 2·3)		(B) Apply competencies, resources, information, interpersonal skills, and systems of operation in animal systems	
Practice Management (2)		(C) Demonstrate knowledge of personal and occupational safety and health practices in the work place.	
Office Procedures; Clinical; Client Communications-Clinical; Employee Communications-Clinical (2·1, 2-2, 2·3		(D) Identify employers' expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills.	
Food & Animal Diseases (9-4)	(5) The student demonstrates principles relating to the human, scientific, and technological dimensions of scientific animal agriculture and the resources necessary for producing domesticated animals	(B) Identify animal products and consumption patterns relative to human diets and human health issues.	

Animals & Society (1-3)		(C) Describe the growth and development of livestock as a &lobal community	
Anatomy & Physiology of Animals; Artificial Insemination; Reproduction & Rectal Palpation in Cattle (4-1, 4-4, 15-6, 15-7)	(6) The student applies the principles of reproduction and breeding to livestock improvement	(A) Describe reproductive cycles and relate them to breeding systems	
Genetics; Collecting & Handling Semen; Artificial Insemination; Reproduction & Rectal Palpation In Cattle (4-4, 15-5, 15-6, 15-7)		(B) plain the embryo transfer process and how it can Impact the livestock industries	
Genetics		(C) Recognize the significance of meiosis to sexual reproduction	
		(D) Evaluate animal behavior and Its relationship to livestock management.	
Reading Animal Behavior (4-2) Genetics (4-4)	(7) The student applies the principles of molecular genetics and heredity	(A) Explain Mendel's laws of inheritance by predicting genotypes and phenotypes of offspring using the Punnet square	
Genetics (4-4)		(B) Explain the inheritance of sex linked characteristics and provide some examples	
Genetics (4-4)		(C) Identify and compare the three parts of nucleic acids.	
Anatomy & Physiology of Animals (4-1)	(8) The student examines and compares animal anatomy and physiology in livestock species	(E) Explain how traits are passed from parent to offspring & through genetic transfer and the Implications of breeding practices	
Anatomy & Physiology of Animals (4-1)		(A) Identify and compare the external anatomy of a variety of livestock species	
Anatomy & Physiology of Animals (4-1)		(B) Compare the anatomy and physiology of the skeletal, muscular, reproductive, digestive, circulatory, gastrointestinal, urinary, respiratory, nervous, and endocrine system	
Anatomy & Physiology of Animals (4-1)		(C) Describe interactions among various body systems such as circulatory, respirator, and muscular system	
Anatomy & Physiology of Animals (4-1)		(D) Identify and describe the functions of epithelial, connective, and muscular tissue and relate these to animal body systems	
Animal Nutrition (5)	(9) The student determines nutritional requirements of ruminants and non-ruminants	(B) Identify and describe sources of nutrients and classes of feeds and relate to the nutritional requirements of ruminant and non-ruminant animals	
Animal Nutrition (5)		(C) Identify and describe vitamins, minerals, and feed additives and how they relate to the nutritional requirements of ruminant and non-ruminant animals	
Animal Nutrition (5)		(D) Formulate rations bases on different nutritional requirements	
Animal Nutrition (5)		(E) Analyze feeding practices in relation to nutritional requirements of animals	

Nutritional Diseases (11·1)		(F) Analyze feed quality issues and determine their effect on animal health .	
Genetics & Disease; The Battle Against Disease; Diseases Common to Humans & Animals; Food & Animal Diseases (9-1, 9-2, 9-3, 9-4)	(10) The student evaluates animal diseases and parasites.	(A) Identify factors that influence the health of animals, such as geographic location, genetic composition, and inherited diseases to a particular species	
Genetics & Disease (9·1)		(B) Identify the pathogens and describe the effects that diseases have on various body systems	
Prevention; Treatment; Controlling Internal Parasites; Controlling External Parasites (12-1, 12-2, 12-3, 12-4)		(C) Explain the methods of prevention, control, and treatment for diseases	
Genetics & Disease; The Battle Against Disease; Diseases Common to Humans & Animals; Food & Animal Diseases; Infectious Diseases (9-1, 9-2, 9-3, 9-4, 10)		(D) Describe the process of immunity and disease transmission	
Controlling Internal Parasites; Controlling External Parasites (12-3, 12-4)		(E) Explain how parasites are transmitted and the effect they have on the host	
Controlling Internal Parasites; Controlling External Parasites (12-3, 12-4)		(F) Explain the methods of prevention, control, and treatment of internal and external parasites	
Controlling Internal Parasites; Controlling External Parasites (12-3, 12-4)		(G) Describe the life cycles of various parasites and relate them to animal health issues	
Anatomy & Physiology of Animals (4-1)	(11) The student defines how an organism grows and how specialized cells, tissues, and organs develop	(A) Compare cells from different parts of animals, including epithelia, muscles, and to show specialization of structure function	

Anatomy & Physiology of Animals (4-1)		(B) Describe and explain cell differentiation in the development of organisms	
Anatomy & Physiology of Animals (4-1)		(C) Sequence the levels of organization in animals and relate the parts to each other and to the whole	
Genetics; Collecting & Handling Semen; Artificial Insemination (4-4, 15-5, 15•6)	(12) The student recognizes policies and issues in animal science	(A) Discuss the impacts of biotechnology in the production of livestock such as cloning, artificial insemination, and freezing of semen and embryo	
Animals & Society; Animal Welfare Regulations (1-3, 16-13)		(B) Analyze the issues surrounding animal welfare and the humane treatment of livestock	
Animal Nutrition (5)		(C) Apply principles of nutrition to maximize feed efficiency for livestock.	
Anatomy & Physiology of Animals; Marketing Animals (4-1, 15-3)	(13) The student discusses livestock harvesting operations	(A) Map the stages of animal growth and development as it relates to market readiness	
Marketing Animals; Preparing Livestock for Shipment (15-3, 15-4)		(B) Describe the harvesting process	
Marketing Animals; Food Safety Program (15-3, 16-1		(C) Describe federal and state meat inspection standards such as safety, hygiene, and quality control	
Marketing Animals (15-3)	(14) The student explores methods of marketing livestock	(A) Compare various methods of marketing livestock	
Marketing Animals (15-3)		(B) Describe methods of marketing meat and meat products	
PRINCIPLES OF AGRICULTURE, FOOD, AND NATURAL RESOURCES			
The Profession of Veterinary Medicine; The Veterinary Assistant; Animals & Society (1-1, 1-2, 1-3)	(1) The student learns the employability characteristics of a successful employee	(A) Identify career development and entrepreneurship opportunities In the field of agriculture, food, and natural resources, including how to search for and obtain employment, what qualifications are required for varying career fields, and how to advance in a position	
The Profession of Veterinary Medicine; The Veterinary Assistant; Animals & Society (1-1, 1-2, 1-3)		(B) Identify careers in agriculture, food, and natural resources with required aptitudes in science, mathematics, language arts, and social studies	
Practice Management (2)		(C) Apply competencies related to resources, Information, interpersonal skills, problem solving, critical thinking, and systems of operation in agriculture food, and natural resources	
Practice Management (2)		(D) Demonstrate knowledge of personal and occupational safety, health, and first-aid policy in the workplace	

Emergency Animal Management		(E) Develop response plans to emergency situations	
Disasters (17-2); Practice Management (2)		(F) Identify employer's expectations, including appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills	
Records & Record Keeping (15-10)		(A) Apply proper record keeping skills as they relate to a supervised experience	
Records & Record Keeping (15-10)		(B) Design and use a customized record-keeping system for the Individual; supervised agriculture experience	
Animal & Society (1-3)	(2) The student describes the historical, current, and future significance of the agriculture industry	(C) Identify the scope of agriculture and Its effects upon society	
Poisonous Plants (11-5)	(1) The student develops technical knowledge and skills related to plant syst=ems·'--	(D) Identify plants of importance to agriculture, food, and natural resources	
Genetics (4-4)	(2) The student develops technical knowledge and skills related to animal systems.	(A) Describe animal growth and development	
Anatomy & Physiology of Animals (4-1)		(B) Identify animal anatomy and physiology	
Breeds of Livestock (4-7)	(3) Recognize common breeds and varieties of exotic animals that visit the clinic	(C) Identify breeds and classes of livestock	
Genetics; Collecting & Handling Semen; Artificial Insemination; Reproduction & Rectal Palpation In cattle (4-4, 15-5, 15-6, 15-7)		D) Discuss animal selection, reproduction, breeding and genetics	
Assisting with Examinations & Treatments; Laboratory Aids & Examination; Medical Waste Disposal; Laws Related to Veterinary Medicine (7, 8, 16-14, 16-16)	(4) The student safely performs basic power, structural, technical system skills In agricultural applications	(A) Understand safe and appropriate laboratory procedures and policies	

Food Safety Programs; Carcass Disposal Regulations; Animal Welfare Regulations (16-10, 16-12, 16-13)	(5) The student explains the relationship between regulations; agriculture and safety, health and the environment	A) Determine the effects of agriculture, food, and natural resources upon safety, health and the environment	
Food Safety Programs; Carcass Disposal Regulations; Animal Welfare Regulations (16-10, 16-12, 16-13)		(B) Identify regulations relating to safety, health, and the environmental systems in agriculture	
Food Safety Programs; carcass Disposal Regulations; Animal Welfare Regulations; Laws Related to Veterinary Medicine (16-10, 16-12, 15-13, 16-16)		(C) Describe methods to maintain and improve safety, health, and the environmental systems in agriculture, food, and natural resources	