**Companion Animal Selection, Nutrition and Management**

Subject Code: 010925

Course & Unit Descriptions

**Course Description:**

Students will identify and apply responsible animal science principles and routine husbandry practices to companion animals. Topics will include principles and practices of nutrient utilization, breeding programs and management of facility/housing design, meal plans and general care practices. Students will apply knowledge of companion animal care to enhance animal growth, enrichment, training, and education engagement programs. Throughout the course, students will follow practices for care and legal compliance in relation to classification of animals.

**Unit: Introduction to Small Animal Science**

Learners will describe practices and terminology used in the selection, care, health, and management of small animals.

Outcome 2.2

Body Systems: Describe the interrelationships of animal body systems with growth, development, health, maintenance, reproduction and economic production.

Competency:

2.2.1. Describe external anatomical parts and their functions.

2.2.2. Identify the anatomical parts of the digestive system and describe their physiology.

Outcome 2.3

Care and Management: Apply animal care and management procedures to ensure animal husbandry and welfare, including managing environmental conditions to ensure animal health and performance.

Competency:

2.3.1. Identify species-specific terminology based on gender and age.

2.3.2. Identify, classify, evaluate and select animal species or breeds for a desired outcome.

**Unit: Feeding and Nutrition**

The learner will develop appropriate feeding management programs for the various phases of the life cycle as well as consideration for special-needs situations including nutritional management of various diseases. They will develop an understanding of nutrition requirements and how to manage those nutrients in feed rations.

Outcome 2.1

Nutrition: Analyze, formulate, prepare and administer a ration for a population of specific animal species based on the economics, nutrition and availability of feed and evaluate the feed's effects on animals.

Competency:

2.1.1. Identify the traditional and alternative types, compositions, quality and compatibility of feeds, feed additives and feed byproducts.

2.1.2. Determine the role of nutrients and the nutritional requirements of different animal life processes and species.

2.1.3. Analyze the nutritional content and quality of feeds.

2.1.4. Identify and address major nutrient deficiency and toxicity symptoms.

2.1.5. Identify and describe biological and non-biological contaminants found in feedstuffs and their impacts on animals.

2.1.6. Determine feed efficiency and value in relation to the cost, quality and availability of feeds.

2.1.7. Formulate and prepare rations and diets for production, specialty markets and special diets.

2.1.8. Select and implement feeding and watering practices and systems, based on the animal population and purpose.

Outcome 7.1

The Science of Food: Differentiate the structures, functions and sources of basic functional ingredients and the roles they play in the development and manufacturing of food products for human nutrition.

Competency:

7.1.5. Describe the composition, structure and sources of sugars, complex carbohydrates, lipids, vitamins, minerals and proteins (i.e., functional ingredients) and their nutritional contributions to dietary needs.

Outcome 9.3

Biomass: Describe and manage processes required to extract energy from biomass.

Competency:

9.3.3. Identify feedstock materials (e.g., plants, algae, municipal waste) used to produce energy and compare the energy potential of each.

**Unit: Reproduction**

In this unit, the learner will use applications of reproduction and genetics to improve efficiency of animal breeding programs.

Outcome 2.6

Population Management: Manage reproduction practices in animal populations across habitats to achieve the desired outcomes and specific goals.

Competency:

2.6.1. Identify factors that lead to reproductive maturity and select animals for reproductive readiness.

2.6.2. Compare and select superior individuals based on phenotype.

2.6.3. Compare and select superior individuals based on breeding values and heritability of the desired traits.

2.6.4. Determine the factors that influence estrus, gestation and parturition and employ appropriate management practices.

2.6.5. Manipulate an animal’s reproductive processes to support breeding (e.g., sex-sorted semen, heat synchronization, nutritional flushing, light cycling).

2.6.6. Evaluate and employ breeding methods (e.g., artificial insemination, embryo transfer, natural selection, selective breeding, invitro fertilization, cloning).

2.6.7. Describe nutritional and environmental influences during different stages of gestation.

2.6.8. Describe ethical and responsible animal population management practices (e.g., spaying, neutering, birth control, relocation, reintroduction, hunting, containment, culling, euthanasia).

**Unit: Animal Health, Behavior, Welfare and Husbandry**

Based on the natural behavior of an animal, a student will be able to develop animal management systems that consider the welfare of the animal.

Outcome 2.3

Care and Management: Apply animal care and management procedures to ensure animal husbandry and welfare, including managing environmental conditions to ensure animal health and performance.

Competency:

2.3.5. Perform species-specific animal identification techniques (e.g., chipping, tagging, branding, notching, tattooing).

2.3.6. Use identification techniques for record keeping and traceability.

2.3.8. Identify and recognize predator-prey relationships and implement control measures.

2.3.9. Evaluate and perform animal care procedures throughout the life of the animal.

2.3.11. Recognize common restraints and tack devices, including their use and adjustment.

2.3.12. Groom animals through brushing and bathing.

2.3.13. Assess the nails and hooves of animals and understand the practice of trimming and treating for specific species.

2.3.14. Compare and contrast different breed standards of grooming and styling techniques for specific animal breeds and species.

Outcome 2.5

Animal Health: Implement preventive measures, treatment and maintenance options for species-specific diseases and disorders to improve an animal’s health and welfare.

Competency:

2.5.2. Apply concepts of body condition scoring to assess an animal's general health and nutrition status.

Outcome 2.7

Animal Behavior: Apply management practices to assure quality animal care, considering species-specific behaviors, human safety, social influences, public perception and regulations associated with animal welfare.

Competency:

2.7.1. Understand social influences, public perception and regulations that are associated with animal welfare.

2.7.2. Describe the adaptations and special senses (e.g., sight, hearing, smell, touch) of animals and how they contribute to animal behavior.

2.7.3. Identify and describe the innate behavioral patterns of animals.

2.7.4. Identify social relationships involved in behavioral adjustment and adaptation (e.g., animal-to-animal and human-to-animal interaction).

2.7.5. Interpret an animal’s intent based on its vocalization, body posture and chemical means of communication.

2.7.6. Recognize behavior abnormalities and employ corrective action.

2.7.7. Handle, restrain and move animals, while ensuring the safety of the animals and their handlers.

**Unit: Facilities Management**

Students will examine various facilities and determine their efficiency, safety, and usability. They will learn the demands of caring for these facilities and how to properly design them.

Outcome 1.12

Site and Personal Safety Procedures: Follow site and personal safety procedures in specific situations with specialized tools and equipment, evaluate the situation and take corrective action.

Competency:

1.12.6. Identify procedures for the handling, storage and disposal of hazardous materials.

1.12.7. Select, use, store, maintain and dispose of personal protective equipment (PPE), appropriate to job tasks, conditions and materials.

1.12.9. Identify, inspect and use safety equipment appropriate for the task.

1.12.17. Identify symptoms of exposure to health-threatening environments (e.g., temperature; chemical

noise, vibration, harshness [NVH] hazards).

Outcome 2.3

Care and Management: Apply animal care and management procedures to ensure animal husbandry and welfare, including managing environmental conditions to ensure animal health and performance.

Competency:

2.3.3. Determine the biotic and abiotic factors (e.g., air, ventilation) that impact the animals’ environment.

2.3.4. Apply concepts of pest control, sanitation and disinfection procedures for the animals’ care and management.

2.3.7. Estimate an operation’s or environment's carrying capacity and its impact on animal health.

2.3.10. Monitor and evaluate the quality of an animal’s habitat and implement corrective methods as needed.

**Unit: Business Opportunities in Companion Animal Industries**

Buying and selling animals is an important principle in managing populations. Learners will examine the methods of sales and purchasing animals.

Outcome 1.2

Leadership and Communications: Process, maintain, evaluate and disseminate information in a business. Develop leadership and team building to promote collaboration.

Competency:

1.2.1. Extract relevant, valid information from materials and cite sources of information.

1.2.2. Deliver formal and informal presentations.

Outcome 1.3

Business Ethics and Law: Analyze how professional, ethical and legal behavior contributes to continuous improvement in organizational performance and regulatory compliance.

Competency:

1.3.1. Analyze how regulatory compliance (e.g., United States Department of Agriculture [USDA], Food and Drug Administration [FDA], United States Department of Interior [USDI], Ohio Livestock Care Standards, water quality standards, local water regulations, building codes) affects business operations and organizational performance.

1.3.2. Follow protocols and practices necessary to maintain a clean, safe and healthy work environment.

1.3.3. Use ethical character traits consistent with workplace standards (e.g., honesty, personal integrity, compassion, justice).

1.3.9. Identify potential conflicts of interest (e.g., personal gain, project bidding) between personal, organizational and professional ethical standards.

Outcome 1.6

Business Literacy: Develop foundational skills and knowledge in entrepreneurship, financial literacy and business operations.

Competency:

1.6.1. Identify business opportunities.

1.6.3. Explain the importance of planning your business.

Outcome 1.8

Operations Management: Plan, organize and monitor an organization or department to maximize contribution to organizational goals and objectives.

Competency:

1.8.2. Select and organize resources to develop a product or a service.

1.8.8. Identify routine activities for maintaining business facilities and equipment.

1.8.9. Develop a budget that reflects the strategies and goals of the organization.

Outcome 1.10

Sales and Marketing: Manage pricing, place, promotion, packaging, positioning and public relations to improve quality customer service.

Competency:

1.10.2. Determine the customer's needs and identify solutions.

1.10.3. Communicate features, benefits and warranties of a product or service to the customer.

1.10.5. Monitor customer expectations and determine product/service satisfaction by using measurement tools.

1.10.6. Discuss the importance of correct pricing to support a product’s or service’s positioning in the marketing mix.

1.10.8. Use promotional techniques to maximize sales revenues (e.g., advertising, sales promotions, publicity, public relations).

1.10.10. Demonstrate sales techniques.

**Unit: Careers in Companion Animal Industries**

**Learners will identify and develop the communication and business leadership skills and knowledge needed in the small animal science career field.**

Outcome 1.1

Employability Skills: Develop career awareness and employability skills (e.g., face-to-face, online) needed for gaining and maintaining employment in diverse business settings.

Competency:

1.1.1. Identify the knowledge, skills and abilities necessary to succeed in careers.

1.1.2. Identify the scope of career opportunities and the requirements for education, training, certification, licensure and experience.

Outcome 1.2

Leadership and Communications: Process, maintain, evaluate and disseminate information in a business. Develop leadership and team building to promote collaboration.

Competency:

1.2.3. Identify and use verbal, nonverbal and active listening skills to communicate effectively.

1.2.5. Communicate information (e.g., directions, ideas, vision, workplace expectations) for an intended audience and purpose.

1.2.6. Use proper grammar and expression in all aspects of communication.

1.2.12. Use technical writing skills to complete forms and create reports.