**Course Description:**

Students will identify and apply responsible animal science principles and management practices to equine populations. Topics will include equine nutrition, selection, reproduction and facility design and management. They will apply knowledge of equine science to enhance animal growth, enrichment and training, along with providing educational and visitor engagement programs. Throughout the course, students will develop management plans that reflect the classification of animals and follows best practices for care and legal compliance.

**Strand 1. Business Operations/21st Century Skills**

Learners apply principles of economics, business management, marketing and employability in an entrepreneur, manager and employee role to the leadership, planning, developing and analyzing of business enterprises related to the 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.

**Competencies**

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.

**Competencies**

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

1.2.2. Deliver formal and informal presentations.

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.

**Outcome: 1.3. Business Ethics and Law**

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

**Competencies**

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.

**Competencies**

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.

**Competencies**

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.

**Competencies**

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.

*An “X” indicates that the pathway applies to the outcome.*

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| **Pathways** |  | Agribusiness and Production Systems | X | Animal Science and Management |  | Bioscience | | |  | Horticulture |
|  | Natural Resource Management |  | Power Technology | | |  |  | | |
| **Green Practices** |  | Green-specific |  | Context-dependent | | |  | Does not apply | | |

**Strand 2. Animal Science**

Learners apply principles of animal anatomy, physiology, genetics, behavior and nutrition to the research and development, selection and reproduction, health and management of animals in domestic and natural environments.

**Outcome: 2.1. Nutrition**

Analyze, formulate, prepare and administer a ration for a population of specific animal species based on economic, nutrition and availability of feed and evaluate its effects on animals.

**Competencies**

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: 2.2. Body Systems**

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

**Competencies**

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.

**Competencies**

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.

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.

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

2.3.6. Use identification techniques for record keeping and traceability.

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

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.

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

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: 2.4. Recognizing Diseases and Disorders**

Evaluate animal conditions for species-specific diseases and disorders to assess an animal’s health and welfare.

**Competencies**

2.4.2. Examine an animal to evaluate its general condition.

2.4.3. Investigate and appraise signs of pain, distress, allergic reactions and lameness.

2.4.4. Assess genetic abnormalities in the skeleton, body form and body functions and identify the

symptoms associated.

2.4.14. Identify and recognize normal and abnormal dental structures and conditions.

**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.

**Competencies**

2.5.1. Obtain and interpret an animal's vitals.

2.5.2. Apply concepts of body condition scoring to assess general health and nutrition status.

2.5.3. Recognize the preventative measures or treatments needed to maintain animal health.

2.5.4. Apply basic principles of first-aid.

**Outcome: 2.6. Population Management**

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

**Competencies**

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).

**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.

**Competencies**

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.

*An “X” indicates that the pathway applies to the outcome.*

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| **Pathways** |  | Agribusiness and Production Systems | X | Animal Science and Management |  | Bioscience | | |  | Horticulture |
|  | Natural Resource Management |  | Power Technology | | |  |  | | |
| **Green Practices** |  | Green-specific |  | Context-dependent | | |  | Does not apply | | |