south dakota DEPARTMENT OF EDUCATION
Learning. Leadership. Service.

Fundamental Animal Science

Career Cluster	Agriculture, Food and Natural Resources
Course Code	18101
Prerequisite(s)	Recommended: Introduction to AFNR
Credit	0.5 or 1.0 credit
Program of Study and Sequence	Foundation course – Cluster course – Fundamental Animal Science – Advanced Animal Science - Ag Biotechnology – Capstone Course
Student Organization	National FFA Organization
Coordinating Work-Based Learning	Job shadowing, mentoring, internships, entrepreneurships, service learning, workplace tours, apprenticeship, school-based enterprises, Supervised Agricultural Experience (SAE)
Industry Certifications	OSHA 10 Hour Safety Certification (Agriculture or General Industry), National Career Readiness Certificate (NCRC), Beef Quality Assurance, Youth Beef Quality Assurance, Youth Beef Industry Food Safety, Youth Humane Equine Management, Youth Quality Care Assurance, 4-H Horse
Dual Credit or Dual Enrollment	https://sdmylife.com/images/Approved-CTE-Dual-Credit.pdf
Teacher Certification	Agriculture Food and Natural Resources Cluster Endorsement; Animal Systems Pathway Endorsement; *Agriculture Education
Resources	

Course Description

Fundamental Animal Science will address the basic knowledge and skills necessary to care for and meet the needs of animals, along with soft skills necessary for careers in the Agriculture, Food and Natural Resources sector. Topics addressed in the course include: animal anatomy and physiology, animal health, safely working with animals, animal nutrition, reproductive systems, animal performance, animal industry issues, animal products/marketing and employability. Utilizing appropriate equipment and technology should enhance classroom and laboratory content. Algebra, English, Biology and human relations skills will be reinforced in the course. Work-based learning strategies appropriate for this course are school-based enterprises and field trips. This class is reinforced through the FFA and Supervised Agricultural Experience (SAE) activities such as the Livestock Evaluation Career Development Event and related Proficiency Awards. Each student will be expected to maintain a SAE.

Program of Study Application

Fundamental Animal Science is a first pathway course in the Agriculture, Food and Natural Resources Program of Study, Animal Systems pathway. Fundamental Animal Science is preceded by a Cluster course and is recommended to be taken prior to participation in Advanced Animal Science or Ag Biotechnology.

Course Standards

AN 1: Examine animal anatomy and physiology of domestic animals.

Webb Level	*Sub-indicator*
Two Skill/Concept	AN 1.1 Recognize and distinguish animals by species, breed, gender or use.
Three Strategic Thinking	AN 1.2 Analyze the parts and functions of an animal's internal and external anatomy.

AN 2: Analyze animal health indicators and responses.

Webb Level	*Sub-indicator*
Three Strategic Thinking	AN 2.1 Evaluate the essential factors that determine the health status of an animal.
Three Strategic Thinking	AN 2.2 Analyze and investigate proper response to poor animal health and the proper usage and effects of animal health products.

AN 3: Demonstrate understanding of practices that promote safe human and animal interactions.

Webb Level	*Sub-indicator*
Four Extended Thinking	AN 3.1 Evaluate an animal's behavior and determine a strategy to safely work with it.
Three Strategic Thinking	AN 3.2 Examine and assess animal housing, equipment, and handling facilities for the safety of animals and humans.
Two Skill/Concept	AN 3.3 Critique management practices that support environmentally sustainable animal production.

AN 4: Distinguish elements of proper animal nutrition.

Webb Level	*Sub-indicator*
Two Skill/Concept	AN 4.1 Compare an animal's differing nutritional needs throughout its life cycle.
Three Strategic Thinking	AN 4.2 Prepare a feed ration according to animal nutrient requirements.

AN 5: Study the reproductive system of animals.

Webb Level	*Sub-indicator*
Two Skill/Concept	AN 5.1 Examine and compare male and female reproductive systems.
One Recall	AN 5.2 Discuss reproductive cycles and breeding techniques.
One Recall	AN 5.3 Identify essential elements of breeding soundness and readiness in males.
One Recall	AN 5.4 Define and identify elements of estrus, gestation and parturition.

AN 6 Identify factors that affect an animal's performance.

Webb Level	*Sub-indicator*
Four Extended Thinking	AN 6.1 Predict genetic outcomes.
Two Skill/Concept	AN 6.2 Assess an operation to determine if an animal has reached its optimum performance level.
Two Skill/Concept	AN 6.3 Recommend management strategies for animals performing at sub optimal level.

AN 7: Examine animal industry issues.

Webb Level	*Sub-indicator*
Two Skill/Concept	AN 7.1 Compare and contrast consumer concerns related to animal food products.
One Recall	AN 7.2 Define common terminology related to animal welfare.
Two Skill/Concept	AN 7.3 Analyze consumer perceptions related to animal welfare.

AN 8: Develop employability skills related to the Animal Systems Pathway.

Webb Level	*Sub-indicator*
Two Skill/Concept	AN 8.1 Develop soft skills to enhance employability.