

STRANDS AND STANDARDS

ANIMAL SCIENCE 2



Course Description

Students will develop knowledge and skills in a wide range of animal agriculture principles, including anatomy and physiology, health maintenance, waste disposal, and facilities. The efficient production and effective management of selected animal enterprises are covered, including beef and dairy cattle, swine, sheep and goats, poultry, and equine. Practices in veterinary medicine and those associated with small animal care are included.

Intended Grade Level	11-12
Units of Credit	1.0
Core Code	30.02.00.00.001
Concurrent Enrollment Core Code	N/A
Prerequisite	Animal Science 1
Skill Certification Test Number	123
Test Weight	1.0
License Area of Concentration	CTE and/or Secondary Education 6-12
Required Endorsement(s)	
Endorsement 1	Agriculture (CTE/General)
Endorsement 2	Animal Science
Endorsement 3	N/A

STRAND 1

Student will participate in personal and leadership development activities through the FFA.

Standard 1

Student will use communication skills to effectively communicate with others.

- Understand when it is appropriate to listen and to speak.
- Understand and follow verbal and written instructions for classroom and laboratory activities.
- Will practice communication skills through public speaking using one or more of the following activities: memorized speech, prepared speech, extemporaneous speech, parliamentary practice, group presentation, or serving in a leadership capacity.

Standard 2

Student will effectively use teamwork to respectfully work with others.

- Identify and understand different roles in working with a team.
- Lead a group discussion or serve in a leadership capacity.

Standard 3

Student will use critical thinking and problem-solving skills.

- Analyze the cause of the problem.
- Develop a solution to address the problem.
- Implement the plan.
- Evaluate the effectiveness of the plan.

Standard 4

Student will be dependable, reliable, steady, trustworthy, and consistent in performance and behavior.

- Set and meet goals on attendance and punctuality.
- Prioritize, plan, and manage work to complete assignments and projects on time.

Standard 5

Student will be accountable for results.

- Use an achievement chart for activities and behaviors in class that encourages a personal evaluation of classroom performance.
- Use reflection to describe what was learned, what went well, what could have been improved, and what are the implications to the learning process.
- Track and communicate progress toward completion of assignments and projects.

Standard 6

Be familiar with the legal requirements and expectations of the course.

- Be familiar with the course disclosure statement and all requirements for successful completion of the course.
- Demonstrate workplace ethics, e.g. fair, honest, disciplined.

Performance Skills

- Student will practice communication skills through public speaking using one or more of the following activities: memorized speech, prepared speech, extemporaneous speech, parliamentary practice, group presentation, or serving in a leadership capacity.

STRAND 2

Student will participate in work-based learning activities through the Supervised Agricultural Experience (SAE) Program.

Standard 1

Student will demonstrate employability skills.

- Use a career search network to find career choices.
- Identify appropriate CTE Pathway for selected career choice.
- Prepare for entry into the work force by completing one of the following: list of required skills needed for a career choice, a resume including a list of demonstrated skills, a cover letter or letter of application, a job application, or participate in an actual or simulated job interview.

Standard 2

Student will participate in a work-based learning experience outside the classroom.

- Student will plan and implement a Supervised Agricultural Experience Program:
 - Foundational SAE: Career exploration and planning, employability skills for college and career readiness, personal financial management and planning, workplace safety, and agricultural literacy.
 - Immersion SAE: Ownership/entrepreneurship, placement/internship, research, school-based enterprise, and/or service-learning experiences.

Standard 3

Student will develop a job portfolio specific to their selected SAE/WBL experience.

- Student will keep a personal record/journal/log of their SAE/WBL experience; including pictures, financial records or log of their hours, skills learned, goals, reflection, etc.

Performance Skills

- Student will keep a personal record/journal/log of their SAE/WBL experience; including pictures, financial records or log of their hours, skills learned, goals, reflection, etc.

STRAND 3

Students will apply management principles to improve livestock production systems.

Standard 1

Select the management principles appropriate for the beef industry.

- Identify types of beef production systems.
- Determine which breeds of beef animals are appropriate for the location, available facilities, and production system.
- Select beef animals to improve herd genetics.
- Determine the most cost-effective feeds for supplying a balanced ration for beef animals.
- Describe the influence beef grade has on preparation procedures and retail price.
- Compare and contrast beef marketing options.
- Determine how beef product prices are affected by federal price supports and marketing orders.

Standard 2

Analyze dairy production practices.

- Select dairy cattle to encourage herd improvement.
- Determine the advantages and disadvantages of the major breeds of dairy cattle.
- Determine practices in the care and management of dairy cattle to improve production and overall

herd health.

- Evaluate milk samples for quality and off-flavor characteristics.
- Discuss the cheese-making process and identify different varieties of cheese.
- Discuss consumer issues related to dairy production practices (e.g., rBST use).
- Compare and contrast dairy marketing options.
- Determine how dairy product prices are affected by federal price supports and marketing orders.

Standard 3

Determine effective swine management practices.

- Compare and contrast various pork production systems.
- Select swine appropriate for the location, available facilities, and production system.
- Determine practices in the care and management of swine to improve production and overall herd health.
- Describe the influence pork grade has on preparation procedures and retail price.
- Compare and contrast methods of marketing hogs.
- Determine how pork product prices are affected by federal price supports and marketing orders.

Standard 4

Analyze the sheep and goat industry.

- Compare and contrast various sheep and goat production systems.
- Select sheep and goats appropriate for the location, available facilities, and production system.
- Determine practices in the care and management of sheep and goats to improve production and overall herd health.
- Determine consumer demand and marketing opportunities for sheep and goat products.
- Compare and contrast methods of marketing sheep and goat products.
- Determine how sheep and goat product prices are affected by federal price supports and marketing orders.

Standard 5

Determine effective poultry production practices.

- Compare and contrast various poultry production systems.
- Determine practices in the care and management of poultry to improve production and overall flock health.
- Determine the nutritional requirements of different types of poultry.
- Determine the effect of environmental factors on poultry products.
- Discuss consumer issues related to poultry production.
- Compare and contrast methods of marketing poultry products.

Standard 6

Analyze the equine industry.

- Compare and contrast characteristics of equine production systems.
- Select equine animals based on pedigree.
- Determine practices, equipment, supplies, and facilities for proper care of equine.
- Demonstrate methods of handling horses safely.
- Determine the nutritional requirements of horses.
- Explain the methods of maintaining horse health and soundness.
- Discuss equine marketing options and economic importance.

Performance Skills

- Demonstrate the selection of superior horses.
- Identify the external anatomy of each species of livestock.
- Evaluate and select livestock depending on intended use.

STRAND 4

Students will analyze the role of alternative animals in agriculture.

Standard 1

Explore the alternative animal industry.

- Identify specialty agricultural animals (e.g., rabbit, elk, bison, llama, alpaca, ostrich, emu, honeybee, fish, etc.).
- List the advantages and disadvantages of raising specialty animals in agriculture.
- Identify consumer products derived from specialty animals.

Standard 2

Investigate the management practices for alternative animals.

- Discuss the importance of selection and genetics in alternative animals.
- Compare and contrast nutritional needs of alternative animals.
- Identify specific health and management needs of alternative animals.
- Determine consumer demand and marketing opportunities for alternative animal products.

STRAND 5

Students will analyze the small animal care industry.

Standard 1

Explore the small animal care industry.

- Determine the scientific names and breeds for small animal species (e.g., dog, cat, reptile, rodent, bird, ornamental fish, etc.).
- Investigate opportunities for employment and entrepreneurship in the small animal care industry.

Standard 2

Investigate the needs of small animals, including nutrition, housing, health management, and reproduction.

- Determine the nutritional needs of common small animals.
- Determine the housing and facility needs of common small animals.
- Determine the health care needs of common small animals.
- Compare and contrast reproductive processes of common small animals.

STRAND 6

Students will design needed facilities and equipment for the safe and efficient production of livestock.

Standard 1

Determine facilities and equipment needed to house and/or produce livestock.

- Discuss how the natural behaviors of livestock are used in planning livestock facilities.
- Identify facilities and equipment used in modern animal production.
- Explain how appropriate facilities and equipment enhance the safe and efficient production of animals.
- Select facilities and equipment for safely managing animals to enhance production efficiency.

Standard 2

Plan a facility that meets standards for the legal, safe, ethical, and efficient production of livestock.

- List the general standards for an animal facility.
- Determine applicable industry and zoning standards for an animal facility.
- Prepare a general description of an animal facility for a specific production enterprise, including a sketch of the facility layout.
- Develop a biosecurity plan for an animal production facility.

Standard

Develop a waste management plan for an animal production enterprise.

- Determine/estimate wastes produced by an animal production enterprise.
- Investigate appropriate practices for the disposal of animal wastes.
- Design a facility for the disposal of animal wastes.

Performance Skills

- Plan and design an animal waste disposal system.

STRAND 7

Students will investigate the role of veterinary medicine in the animal industry.

Standard 1

Explore the veterinary medicine industry.

- Discuss the meaning and importance of veterinary medicine.
- Describe the delivery of animal health care services, including the major activities in a veterinary medical facility.
- Name and describe major occupations in veterinary medicine.

Standard 2

Identify common practices in the field of veterinary medicine.

- Describe protocol in animal restraint.
- Assess the vital signs of common agricultural animals.
- Determine normal and abnormal internal sounds of animals.
- Use laboratory testing to identify health conditions.
- Determine methods used in the administration of medicines.
- Use species-appropriate animal identification practices.

Standard 3

Provide surgical practices used in the management of livestock.

- Describe breed and gender surgical practices, including castration, docking, and dehorning.
- Explain the importance of aseptic and disinfectant practices with livestock management surgery.

STRAND 8

Students will recognize potential applications of biotechnology in the animal industry.

Standard 1

Distinguish potential applications of biotechnology in the animal industry.

- Define biotechnology, and explore the historical impact it has had on animal agriculture.
- Investigate applications of biotechnology in animal agriculture.

Standard 2

Explore ethical, legal, social, and cultural issues associated with animal biotechnology.

- Identify and evaluate risks associated with biotechnology in animal agriculture.
- Define bioethics, and explain its implications in animal agriculture.

Skill Certification Test Points by Strand

Test Name	Test #	Number of Test Points by Strand										Total Points	Total Questions
		1	2	3	4	5	6	7	8	9	10		