

# Animal Science II

<b>Levels:</b>	<b>Grades 11–12</b>
<b>Units of Credit:</b>	<b>1.00</b>
<b>CIP Code:</b>	<b>02.0241</b>
<b>Core Code:</b>	<b>30-02-00-00-001</b>
<b>Prerequisite:</b>	<b>Animal Science I</b>
<b>Skill Test:</b>	<b># 123</b>

## **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.

## **CORE STANDARDS, OBJECTIVES, AND INDICATORS**

### **STANDARD 1**

**Students will develop personal, leadership, and career skills through FFA participation.**

**Objective 1:** Assess the role of FFA participation in developing personal and leadership skills.

- a. Identify important personal skills and the strategies to use in developing the skills.
- b. Identify important leadership skills and the role of FFA participation in developing the skills.

**Objective 2:** Assess the role of FFA participation in developing career skills.

- a. List and describe proficiency awards appropriate for animal science.
- b. List and describe career development events appropriate for animal science.
- c. Relate the importance of supervised agricultural experience to FFA achievement.
- d. Utilize FFA and supervised agricultural experience participation to gain advanced degrees of FFA membership.

### **STANDARD 2**

**Students will explain the maintenance and expansion of supervised agricultural experience (SAE) programs in agricultural education.**

**Objective 1:** Maintain and use SAE records.

- a. Explain how SAE records are maintained from year to year.
- b. Explain how to summarize and analyze SAE records.

**Objective 2:** Devise long-range plans for expanding SAE programs.

- a. Evaluate the overall quality of a current SAE, and determine how to make it more productive or profitable.
- b. Explain factors that should be considered in expanding an SAE program.
- c. Explain how placement SAE and ownership SAE programs may be expanded.

### **STANDARD 3**

**Students will apply management principles to improve livestock production systems.**

**Objective 1:** Select the management principles appropriate for the beef industry.

- a. Identify types of beef production systems.

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

**Objective 2:** Analyze dairy production practices.

- a. Select dairy cattle to encourage herd improvement.
- b. Determine the advantages and disadvantages of the major breeds of dairy cattle.
- c. Determine practices in the care and management of dairy cattle to improve production and overall herd health.
- d. Evaluate milk samples for quality and off-flavor characteristics.
- e. Discuss the cheese-making process and identify different varieties of cheese.
- f. Discuss consumer issues related to dairy production practices (e.g., rBST use).
- g. Compare and contrast dairy marketing options.
- h. Determine how dairy product prices are affected by federal price supports and marketing orders.

**Objective 3:** Determine effective swine management practices.

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

**Objective 4:** Analyze the sheep and goat industry.

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

**Objective 5:** Determine effective poultry production practices.

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

**Objective 6:** Analyze the equine industry.

- a. Compare and contrast characteristics of equine production systems.
- b. Select equine animals based on pedigree.
- c. Determine practices, equipment, supplies, and facilities for proper care of equine.
- d. Demonstrate methods of handling horses safely.

- e. Determine the nutritional requirements of horses.
- f. Explain the methods of maintaining horse health and soundness.
- g. Discuss equine marketing options and economic importance.

#### **STANDARD 4**

**Students will analyze the role of alternative animals in agriculture.**

**Objective 1:** Explore the alternative animal industry.

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

**Objective 2:** Investigate the management practices for alternative animals.

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

#### **STANDARD 5**

**Students will analyze the small animal care industry.**

**Objective 1:** Explore the small animal care industry.

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

**Objective 2:** Investigate the needs of small animals, including nutrition, housing, health management, and reproduction.

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

#### **STANDARD 6**

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

**Objective 1:** Determine facilities and equipment needed to house and/or produce livestock.

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

**Objective 2:** Plan a facility that meets standards for the legal, safe, ethical, and efficient production of livestock.

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

- Objective 3:** 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.

## **STANDARD 7**

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

**Objective 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.

**Objective 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.

**Objective 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.

## **STANDARD 8**

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

**Objective 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.

**Objective 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.