# Course Outline

**2026-2027 Catalog**

## AGS 40 - Introduction to Animal Science

### Catalog Description

**Transfer Status:** CSU/UC

**Unit(s):** 3.00

**Lecture:** 34.00 Contact hours/68.00 Out of class hours/102.00 Total hours/2.00 Unit(s)

**Lab:** 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)

**Total:** 85.00 Contact hours/68.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

**Course Description:** A scientific approach to the livestock industry encompassing aspects of animal anatomy, physiology, nutrition, genetics and epidemiology. Emphasis on the origin, characteristics, adaptations and contributions of livestock to the modern agriculture industry. Field trips may be required. (C-ID AG-AS 104).

### Objectives

Upon successful completion of this course, the student should be able to:

1. Identify animal contributions to the development of human civilizations.
2. Describe economically significant breeds of animals and their unique adaptations.
3. Describe the function of the major body systems.
4. Identify reproductive cycles and biotechnological principles of animal reproduction.
5. Analyze genetic change through artificial/natural selection.
6. Discuss nutritional needs for various body functions.
7. Describe animal behavior as it relates to animal domestication, health and performance.
8. Explain basic strategies for disease control, prevention and management.
9. Utilize the scientific method to collect data, calculate production parameters and make scientifically-based management decisions.
10. Identify and discuss current issues affecting animal agriculture.

### Course Content

**Topic Titles / Suggested Time Topic**

**Lecture**

| Topics | Lec Hrs |
|---|---|
| Animal agriculture | 3.00 |
| 1. Career opportunities<br>2. Importance of domestic animals to the world and to the United States<br>3. Economic importance of animal agriculture<br>4. Animal contributions to human needs<br>5. Ethnic and cultural contributions to animal domestication | |
| Unique adaptations of various species | 3.00 |
| 1. Natural selection vs artificial selection<br>2. Meat animal use and production<br>3. Fiber production<br>4. Dairy production<br>5. Recreational and companionship use of animals | |
| Anatomy and physiology | 4.00 |
| 1. Cellular and molecular biology of animals<br>2. Identification of external anatomy for various species<br>3. Analysis of body systems – reproductive, respiratory, digestive, immune, circulatory | |
| Animal reproduction | 4.00 |
| 1. Animal breeding systems<br>2. Reproductive management and technology<br>3. Fertility assessment | |
| Genetics | 4.00 |
| 1. Introduction and review of genetic principles<br>2. Gene modification and genetic interactions<br>3. Genetic improvement and variation | |

| Topics | Lec Hrs |
|---|---|
| 4. Inheritance and population genetics | |
| Nutrition | 4.00 |
| 1. Classes of nutrients<br>2. Feed identification and composition<br>3. Livestock feeding management practices | |
| Animal behavior (ethology) | 3.00 |
| 1. Behavioral characteristics<br>2. Animal handling and safety<br>3. Conditioning | |
| Animal health | 3.00 |
| 1. Biosecurity<br>2. Vital Signs<br>3. Indications of health vs disease<br>4. Common diseases | |
| Issues affecting animal agriculture | 3.00 |
| 1. Animal welfare issues<br>2. Advances in biotechnology<br>3. Governmental and environmental concerns<br>4. Food safety<br>5. Public policy and consumer awareness | |
| The scientific method | 3.00 |
| 1. Research in animal agriculture<br>2. Developing a research model<br>3. Humane treatment of research animals | |
| **Total Hours:** | **34.00** |

**Lab**

| Topics | Lab Hrs |
|---|---|
| Unique adaptions of various species | 6.00 |
| Natural selection vs. artificial selection | 6.00 |
| Anatomy and physiology | 6.00 |
| Animal reproduction | 6.00 |
| Genetics | 6.00 |
| Nutrition | 6.00 |
| Animal behavior (ethology) | 3.00 |
| Biosecurity | 3.00 |
| The scientific method | 6.00 |
| Issues affecting animal agriculture | 3.00 |
| **Total Hours:** | **51.00** |

## Methods of Instruction

A. Discussion
B. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
C. Laboratory Experiments
D. Lecture
E. Problem-Solving Sessions
F. Reading Assignments

## Methods of Evaluation

A. Lab Reports
B. Exams/Tests
C. Research Projects
D. Class participation
E. Lab Projects
F. Practical Evaluations

## Examples of Assignments

**Reading Assignments**

1. Read a peer-reviewed academic article related to livestock genetics and be prepared to discuss in class.
2. Read the textbook chapter on the scientific method in animal agriculture and be prepared to discuss in class.

**Writing Assignments**

1. Conduct a literature review on the epidemiology of infectious and non-infectious diseases in livestock and write a 2-page meta-analysis of findings.
2. Read the textbook chapter on animal behavior and write a 2-page paper on the fields of animal behavior and systems of animal behavior.

**Out-of-Class Assignments**

1. Use the library website to conduct a literature review on animal agriculture and submit a 1-2 page paper on your findings.
2. Collect and analyze data from a local livestock operation and share your findings with the class.

## Recommended Materials of Instruction

Flanders, F., et al. (2025). Modern Livestock & Poultry Production. *Cengage, 10th.* 9780357543733.
Flanders, F., et al. (2024). Lab Manual for Flanders' Modern Livestock & Poultry Production. *Cengage, 10th.* 9780357924464.

**Zero Cost Textbook**

Lawson, R. (2025). Anatomy and physiology of animals. Wikibooks. (OER).
https://en.wikibooks.org/wiki/Anatomy_and_Physiology_of_Animals

**Other Learning Materials**

Proper clothing for labs

## Minimum Qualifications

Agricultural Production
Agriculture (Masters Required)

**Created/Revised by:** Vazquez, Jacob
**Date:** 12/01/2025