*Spring 2024*

**SYLLABUS**

**INTRODUCTION ANIMAL SCIENCE**

**Credit: 3-4 semester hours; (includes minimum 1 cr. hr. lab requirement)
 No prerequisite** It is recommended by the articulation committee that the maximum semester or quarter hours be included in the course.

**Course Description**

IAI description: AG 902: *Introduction to Animal Science* (3-4 semester hrs. includes minimum 1 cr. hr. lab requirement @ 1500 minutes per credit hour)

~~The application of the sciences of genetics, physiology, and nutrition to the improvement of the animal industries and an introduction to management and production practices. Includes animal breeds, breeding, anatomy, physiology, nutrition, growth; environment, health and sanitation; products and marketing; production technology and economics; animal behavior; and current issues in animal science.~~

**IAI PANEL REVISED: 04/25/2024 - Added companion animal language. - Effective Fall 2024**

**The application of the sciences of genetics, physiology, and nutrition to the improvement of the animal industries and an introduction to management and production practices. Includes animal breeds, breeding and selection; anatomy physiology, and nutrition and growth; environment, health, and sanitation; products and marketing; production technology and economics; animal behavior; and current issues in animal science. May also include companion animal topics.**

**Objectives:**

1. Demonstrate the application of the science of genetics; physiology and nutrition to the improvement of the animal science.

2. Describe the management and production practices of these industries.

3. Identify the products of these industries and their contribution to society and the environment.

**Approved Texts:**

Blakely and Blade, *The Science of Animal Husbandry*, current edition

Taylor and Field, *Scientific Farm Animal Production*, current edition

**Topics:**  **Hours**

I. Introduction 1-2

A. Scope and Importance

B. History, Growth, and Development of the Animal Industries

C. Careers and Opportunities

II. Breeds 1-3

1. Beef, Dairy, Horses, Companion Animals, Poultry, Sheep, Goats, and Swine

III. Reproduction 4-6

A. Endocrine Systems

B. Reproductive Systems

1. Male

2. Female

a. Milk secretion

b. Physiology of egg laying

C. Principles of Genetics

D. Breeding Systems

E. Improvement Programs

V. Nutrition 7-9

A. Digestive Systems

B. Nutrients and Feed Analysis

C. Nutrient Requirements

D. Feedstuffs

 VI. Growth 1-2

A. Measurement of Growth

B. Factors Affecting Growth

 VII. Environment 1-2

A. Temperature

B. Humidity

C. Light

D. Space

E. Adaptation

 VIII. Animal Health, Behavior, and Sanitation 3-5

A. Sanitation Program

B. Disease Control Program

C. Parasite Control Program

D. Public Health

E. Biosecurity

F. Animal Behavior

 IX. Animal Products, Grades, and Marketing 6-9

1. Meat
2. Skeletal and Muscular Systems

B. Milk

C. Eggs

D. Wool

XI. Production, Technology, and Economics 4-6

A. Performance Standards

B. Livestock Enterprises and Management

1. Contract farming

2. Vertical integration

3. Independent farming

C. Enterprise Cost Analysis

 XIII. Current Issues 2-4

A. Animal Welfare and Ethics

B. Waste Management

C. Biotechnology

D. Food Safety

E. Diseases

**Recommendation:** Labs vary based on facilities/resources of each individual institution, but in general are coordinated with lecture topics.

Lab activities may include the following: Please note that some of these topics may take multiple laboratory sessions and were combined here based on topic.

* Poultry, Egg and Milk Products
* Meat identification, quality, grading, calculations
* Basic feed rations and ingredient identification
* Fetal growth or anatomy (some schools use fetal pigs others use models)
* Genetics and reproduction (mating decisions, genetic improvement, Punnett squares)
* Artificial insemination
* Swine litter processing – ear notching, teeth, castration, etc.
* Animal handling and processing – restraints castration, tagging, tattooing, etc.
* Parturition management – live or model
* Waste management
* Animal behavior observation
* Tours of various farms – beef, sheep, swine, horses, alpacas, poultry
* Animal processing or tours
* Veterinary tours, discussions, etc.
* Perceptions or issues in animal agriculture
* Incubation of chicken eggs

**Other** **Resources:**

Ensminger, *Animal Science*, (not currently in print)

* [Illinois Beef Quality Assurance Program](https://www.bqa.org/beef-quality-assurance-certification/in-person-training/illinois)
* [Rations/Estrus/Beef Management](https://www.iowabeefcenter.org/software.html)
* [Michigan State 4-H Animal Science Links](https://www.canr.msu.edu/resources/4_h_animal_science_anywhere?fbclid=IwAR3T5E34k5_JEPyML0g_p8L4NfoSkUiJnpuxIa4jdT6W2WJhUTdDa7oriLI)
* [Kentucky Bull Assessment Tool](https://afs.ca.uky.edu/beef/KBAT?fbclid=IwAR0Nlyee6zUo5cufQcmQGMNCi1LmXKUe9Frt_Q433R76mhCTJI7Yova10wM)
* Modern Marvels
* [The Butcher](https://www.google.com/search?q=modern+marvels+the+butcher&rlz=1C1CHBF_en&oq=modern+marvels+the+butcher&aqs=chrome..69i57j46j0l6.5952j0j7&sourceid=chrome&ie=UTF-8)
* Milk
* [iCEV (John Andress )](https://login.icevonline.com/Login)
* [Meat Institute/Temple Grandin Videos](https://www.meatinstitute.org/Animal_Welfare)
* Temple Grandin Video - available on Netflix, Amazon Prime, Hulu
* [Masters of Beef Advocacy Training & Resources](https://mba.beeflearningcenter.org/)
* [University of Minnesota Beef Cattle Ration Balance](https://drive.google.com/file/d/1DmusHLnTh2FvEQVPJpqz1sxMGo3GW2IN/view?pli=1)

**There are two ways to access Teaching Resources on the** [**www.ilaged.org**](http://www.ilaged.org) **website:**

**For Files Shared by Postsecondary Instructors:**

PATHWAY: [www.ilaged.org](http://www.ilaged.org) –Teach—Postsecondary Instructors—File Sharing & Teaching Resources—Animal Science Lesson Sharing

 **For Files available from the Illinois Agriculture Education Secondary Curriculum:**

(A log-in is required- this is available through FCAE: <https://www.ilaged.org/Contact>)

PATHWAY: [www.ilaged.org--](http://www.ilaged.org--) Log-in- along left hand side there are two curriculum links: “Curriculum Supplemental Resources” and “Go To MYCAERT Website”