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| Discipline: Agriculture  | Sub-discipline: Animal Science |
| General Course Title: <b>Introduction to Animal Science</b>  | Min. Units: <b>3 Semester</b>  |
| Proposed Suffix:   |                                |
| <p>Course Description:<br/> 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.</p>   |                                |
| Required Prerequisites or Co-Requisites <sup>1</sup>   |                                |
| Advisories/Recommended Preparation <sup>2</sup>  |                                |
| <p>Course Objectives: <i>At the conclusion of this course, the student should be able to:</i></p> <ul style="list-style-type: none"> <li>• Identify animal contributions to the development of human civilizations.</li> <li>• Describe economically significant breeds of animals and their unique adaptations.</li> <li>• Describe the function of the major body systems.</li> <li>• Identify reproductive cycles and biotechnological principles of animal reproduction.</li> <li>• Analyze genetic change through artificial/natural selection.</li> <li>• Discuss nutritional needs for various body functions.</li> <li>• Describe animal behavior as it relates to animal domestication, health and performance.</li> <li>• Explain basic strategies for disease control, prevention and management.</li> <li>• Utilize the scientific method to collect data, calculate production parameters and make scientifically-based management decisions.</li> <li>• Identify and discuss current issues affecting animal agriculture.</li> </ul> |                                |

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| <p>Course Content:</p> <p>A. Natural selection vs. artificial selection</p> <ol style="list-style-type: none"> <li>1. Importance of domestic animals to the world and to the United States</li> <li>2. Economic importance of animal agriculture</li> <li>3. Animal contributions to human needs</li> <li>4. Industry issues and challenges</li> <li>5. Ethnic and cultural contributions to animal domestication</li> </ol> <p>B. Unique adaptations of various species</p> <ol style="list-style-type: none"> <li>1. Meat animal use and production</li> <li>2. Fiber production</li> <li>3. Dairy production</li> <li>4. Recreational and companionship use of animals</li> </ol> <p>Course Content continued:</p> <p>C. 3 Anatomy and physiology</p> |
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<sup>1</sup> Prerequisite or co-requisite course need to be validated at the CCC level in accordance with Title 5 regulations; co-requisites for CCCs are the linked courses that must be taken at the same time as the primary or target course.

<sup>2</sup> Advisories or recommended preparation will not require validation but are recommendations to be considered by the student prior to enrolling.

1. Identification of external anatomy for various species
2. Analysis of body systems – reproductive, respiratory, digestive, immune, circulatory

D. Animal reproduction

1. Reproductive anatomy and physiology
2. Animal breeding systems
3. Fertility assessment

E. Genetics

1. Intro and review of genetic principles
2. Gene modification and genetic interactions
3. Genetic improvement and variation
4. Inheritance and population genetics

F. Nutrition

1. Nutrients contained in animal feeds
2. Feed identification and composition
3. Digestive system adaptations
4. Nutrient requirements for maintenance, growth and lactation

G. Animal behavior (ethology)

1. Behavioral qualities of domestic animals
2. Behavioral modification
3. Instinct, habituation
4. Imprinting
5. Conditioning

H. Biosecurity

1. Epidemiology
2. Disease causing agents
3. Indications of disease
4. Prevention, treatment and cure

I. The scientific method

1. Research in animal agriculture
2. Developing a research model
3. Humane treatment of research animals

Course Content continued:

J. Issues affecting animal agriculture

1. Animal welfare issues
2. Advances in biotechnology

- 3. Governmental and environmental concerns
- 4. Food safety and consumer awareness

Laboratory Activities: Individual Laboratory Activities are designed to support course objectives.

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| Methods of Evaluation: Lecture<br>Comprehensive Quizzes and Exams<br>Written Critical Thinking Scenarios<br>Problem Analysis and Solution<br>Research and Term Papers | Methods of Evaluation: Laboratory<br>Laboratory Skill Validation by Observation<br>Laboratory Reports<br>Laboratory Research Projects and Reports<br>Laboratory Skill Practicum Exams |
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Typical Textbooks, Manuals, or Other Support Materials  
Scientific Farm Animal Production, 8<sup>th</sup> ed., Taylor, Robert E. ,  
 Upper Saddle River, NJ: Prentice Hall, ISBN 0-02-41919291-0  
Livestock and Poultry Production, Gillespie, James R.  
 Animal Science and Industry, Acker, Cunningham

**CSU GE Area B.2 Life Science**

**Statewide Articulation: formally CAN AG 6, CPSLO-ASCI 101, CPP-AVS 112, CSUF-A SCI 1, CSUC-ANSC 101, UCD-ANS 2, other universities as lower division elective**

FDRG Lead Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Mark E. Bender, PhD CSU Stanislaus

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