BUTTE COLLEGE
COURSE OUTLINE

I. **CATALOG DESCRIPTION**

AGS 40 - Introduction to Animal Science **3 Unit(s)**

Prerequisite(s): NONE
Recommended Prep: Reading Level III; English Level III; Math Level II
Transfer Status: CSU/UC
34 hours Lecture
51 hours Lab

This course is a scientific approach to the livestock industry encompassing aspects of animal anatomy, physiology, nutrition, genetics and epidemiology. There will be special emphasis on the origin, characteristics, adaptation and contributions of farm animals to the global agriculture industry. Analysis of the economic trends and career opportunities in animal agriculture will be covered.

II. **OBJECTIVES**

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

A. Identify animal contributions to the development of human civilizations.
B. Describe economically significant breeds of animals and their unique adaptations.
C. Describe the function of the major body systems.
D. Identify reproductive cycles and biotechnological principles of animal reproduction.
E. Analyze genetic change through artificial/natural selection.
F. Discuss nutritional needs for various body functions.
G. Describe animal behavior as it relates to animal domestication, health and performance.
H. Explain basic strategies for disease control, prevention and management.
I. Utilize the scientific method to collect data, calculate production parameters and make scientifically-based management decisions.
J. Identify and discuss current issues affecting animal agriculture.

III. **COURSE CONTENT**

A. **Unit Titles/Suggested Time Schedule**

Lecture

Topics	Hours
1. Introduction to animal agriculture a. Career opportunities b. Importance of domestic animals to the world and to the United States c. Economic importance of animal agriculture d. Animal contributions to human needs e. Ethnic and cultural contributions to animal domestication	4.00
2. Unique adaptations of various species a. Natural selection vs artificial selection b. Meat animal use and production c. Fiber production d. Dairy production e. Recreational and companionship use of animals	4.00
3. Anatomy and physiology a. Identification of external anatomy for various species b. Analysis of body systems – reproductive, respiratory, digestive, immune, circulatory	3.00

4. Animal reproduction a. Animal breeding systems b. Reproductive management and technology c. Fertility assessment	3.00
5. Genetics a. Introduction and review of genetic principles b. Gene modification and genetic interactions c. Genetic improvement and variation d. Inheritance and population genetics	3.00
6. Nutrition a. Classes of nutrients b. Feed identification and composition c. Livestock feeding management practices	3.00
7. Animal behavior (ethology) a. Behavioral characteristics b. Animal handling and safety c. Conditioning	3.00
8. Animal health a. Biosecurity b. Vital Signs c. Indications of health vs disease d. Common diseases	3.00
9. The scientific method a. Research in animal agriculture b. Developing a research model c. Humane treatment of research animals	3.00
10. Issues affecting animal agriculture a. Animal welfare issues b. Advances in biotechnology c. Governmental and environmental concerns d. Food safety e. Public policy and consumer awareness	5.00
Total Hours	34.00

Lab

Topics	Hours
1. Beef and Dairy	3.00
2. Sheep and Swine	3.00
3. Meats lab, safety and processes	3.00
4. Grocery store - meat, cheese, butter, ice cream	3.00
5. Purebred Beef - Expected Progeny Differences (EPD)	3.00
6. Commerical cattle operation - weaning, castration	3.00
7. Dairy farm - production cycle	3.00
8. Milk processing - cheese plant	3.00
9. Sheep - lambing and handling	3.00
10. Purebred Sheep - production cyle	3.00
11. Swine - vaccination, selection, management	3.00
12. Poultry - quality of carcasses and eggs	3.00

13.	Horse - production cycle	3.00
14.	Selection workshop	3.00
15.	Biotechnology and environmental workshop	3.00
16.	North Valley Livestock Tour	6.00
Total Hours		51.00

IV. METHODS OF INSTRUCTION

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

V. METHODS OF EVALUATION

A. Exams/Tests
B. Class participation
C. Written Examinations
D. Practical Evaluations
E. Mid-term and final examinations

VI. EXAMPLES OF ASSIGNMENTS

A. Reading Assignments
   1. Read the chapter on genetic change through selection and be prepared to share your findings with the class.
   2. Read the chapter on market classes and grades of livestock and be able to discuss in a group setting the evaluative criteria for each grade of beef, pork and lamb.

B. Writing Assignments
   1. Read the chapter on animal behavior and and write a 2-3 page paper on the fields of animal behavior and systems of animal behavior.
   2. Read an article from a trade magazine on the issues in animal agriculture and write 2 page paper on animal welfare.

C. Out-of-Class Assignments
   1. Visit any livestock operation in the local area and be prepared to share with the class, the breeds, total numbers and management practices utilized at the operation.
   2. Use the Internet to check current pricing on the major market animals as well as breeding stock for swine, sheep, beef and dairy cattle. This information will be shared with the class.

VII. RECOMMENDED MATERIALS OF INSTRUCTION

Textbooks:

A. Taylor, R. Scientific Farm Animal Production. 10th Edition. Prentice Hall, 2012.

Materials Other Than Textbooks:

A. Materials: 3 ring notebook, proper clothing for labs

Created/Revised by: Bruce Hicks
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