

CATALOG INFORMATION

Dept and Nbr: ANSCI 61            Title: LIVESTOCK FEED/NUTRITION  
Full Title: Livestock Feeding and Nutrition  
Last Reviewed: 4/5/2018

| Units   |      | Course Hours per Week |      | Nbr of Weeks | Course Hours Total |       |
|---------|------|-----------------------|------|--------------|--------------------|-------|
| Maximum | 3.00 | Lecture Scheduled     | 3.00 | 17.5         | Lecture Scheduled  | 52.50 |
| Minimum | 3.00 | Lab Scheduled         | 0    | 17.5         | Lab Scheduled      | 0     |
|         |      | Contact DHR           | 0    |              | Contact DHR        | 0     |
|         |      | Contact Total         | 3.00 |              | Contact Total      | 52.50 |
|         |      | Non-contact DHR       | 0    |              | Non-contact DHR    | 0     |

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable  
Grading:            Grade Only  
Repeatability:    00 - Two Repeats if Grade was D, F, NC, or NP  
Also Listed As:  
Formerly:        AG 61

**Catalog Description:**  
The science of animal nutrition is the basis for "Livestock Feeding and Nutrition". The fundamentals of digestion and absorption in both ruminants and non-ruminants are discussed. The nutritive value of feeds as they relate to the formulation of livestock rations will be emphasized including by-product feeding.

**Prerequisites/Corequisites:**

**Recommended Preparation:**  
Eligibility for ENGL 100 or ESL 100

**Limits on Enrollment:**

**Schedule of Classes Information:**  
Description: The science of animal nutrition is the basis for "Livestock Feeding and Nutrition". The fundamentals of digestion and absorption in both ruminants and non-ruminants are discussed. The nutritive value of feeds as they relate to the formulation of livestock rations will be emphasized including by-product feeding. (Grade Only)  
Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

|                      |                      |                      |           |
|----------------------|----------------------|----------------------|-----------|
| <b>AS Degree:</b>    | <b>Area</b>          | Effective:           | Inactive: |
| <b>CSU GE:</b>       | <b>Transfer Area</b> | Effective:           | Inactive: |
| <b>IGETC:</b>        | <b>Transfer Area</b> | Effective:           | Inactive: |
| <b>CSU Transfer:</b> | Transferable         | Effective: Fall 1981 | Inactive: |
| <b>UC Transfer:</b>  |                      | Effective:           | Inactive: |

**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Outcomes and Objectives:**

Upon completion of the course, students will be able to:

- A. Identify the role of livestock feeding and its part in human nutrition.
- B. Identify career requirements and potential opportunities leading to successful employment.
- C. Identify cultural inputs that have shaped the livestock nutrition industry.
- D. Apply changing nutritional requirements based upon animal physiological development.
- E. Comprehend differences in digestive anatomy that contrast feeding practices.
- F. Demonstrate and comprehend animal behavior as it relates to feeding practices.
- G. Explain in a verbal and written format the role of nutrition in animal health and ultimately food safety.
- H. Collect and calculate data used in ration formulation.
- I. Define and recall biological and inorganic factors that impact the feeding and nutrition industry.
- J. Evaluate economic factors and trends in feeding.
- K. Formulate rations with economic feasibility.
- L. Identify various primary and by-product feeds, forms and processing techniques.
- M. Analyze and comprehend various procurement strategies for feed stuff purchases.
- N. Have reasonable accommodations made to perform all learning objectives regardless of physical and/or learning disabilities.
- O. Formulate balanced rations for livestock.

## **Topics and Scope:**

1. Concepts of Nutrition
  - a. Historical advancements
  - b. Animal nutrition and its role in society
2. Feed Analysis and Source
  - a. Protein
  - b. Carbohydrates
  - c. Fats
  - d. Vitamins
  - e. Minerals
  - f. Water
3. Animal Growth, Composition and Variability
  - a. Water
  - b. Energy
    1. Carbohydrates
    2. Fats
  - c. Proteins
  - d. Inorganic elements
  - e. Vitamins
4. The Gastrointestinal Tract
  - a. Types of gastrointestinal tracts:
    1. Ruminant
    2. Monogastric
    3. Modified mono gastric
  - b. The role of G.I. secretions in the digestive process
  - c. Digestion and absorption
  - d. Transport of nutrients after catabolism
  - e. Fecal and urinary excretions
5. Nutrient Metabolism
  - a. Water
  - b. Carbohydrates
  - c. Lipids
  - d. Proteins and Amino Acids.
  - e. Inorganic Minerals
    1. Macro or primary elements
    2. Micro or trace elements
    3. Toxic elements and symptoms
6. Applied Nutrition
  - a. Feeding standards and productivity
  - b. Feedstuffs
  - c. Preparation and processing
  - d. Ration formulations
  - e. Non-caloric performance enhancers
7. Feeding Practices
  - a. Beef cattle
  - b. Dairy cattle
  - c. Sheep
  - d. Swine
  - e. Horses

## Assignment:

### Lecture Assignments:

Read periodicals, handouts, and textbooks (20 pages per week).

Term papers (6 to 8 pages).

One Midterm.

Final Exam

### Lab Assignments:

Worksheets (16--one per week)

Ration homework problems

## Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Reports

Writing  
10 - 30%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems

Problem solving  
20 - 30%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Class performances

Skill Demonstrations  
10 - 30%

**Exams:** All forms of formal testing, other than skill performance exams.

Quizzes, tests, exams.

Exams  
30 - 60%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

Attendance and participation

Other Category  
0 - 10%

## Representative Textbooks and Materials:

Pond, W.G., et al., Basic Animal Nutrition and Feeding, 4th edition, John Wiley and Sons, 2005.

Church, D.C., Livestock Feeds and Feeding, 4th edition, Regents/Prentice Hall, 2001.

Jurgens, Marshall H., Animal Feeding and Nutrition, 7th edition, Kendall/Hunt Publishing Company, 2001 (Classics in the field)

National Academy Press, NRC Pamphlets