

# Lassen Community College Course Outline

## AGR 13 Feeds and Feeding

3.0 Units

### I. Catalog Description

The science of animal nutrition; the fundamentals of digestion and absorption in both ruminants and non-ruminants are discussed. The nutritive value of feedstuffs as they relate to the formulation of livestock rations will be emphasized. This course has been approved for hybrid delivery.

**Recommended Preparation:** Successful completion of ENGL105 or equivalent multiple measures placement.

Transfers to CSU/UC

*C-ID AG-AS 132L*

34 Hours Lecture, 51 Hours Lab

Scheduled: Fall (odd)

### II. Coding Information

Repeatability: Not Repeatable, Take 1 Time

Grading Option: Graded or Pass/No Pass

Credit Type: Credit - Degree Applicable

TOP Code: 010200

### III. Course Objectives

#### A. Course Student Learning Outcomes

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

1. Balance a ration using least cost principles given an animal species (ruminant or non-ruminant)
2. Recognize nutritional deficiency conditions in major farm animals and make recommendations for correcting the nutritional deficiency
3. Analyze the approximate nutrient composition of at least ten different feed stuffs.

#### B. Course Objectives

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

1. Explain the role of nutrition in animal performance and food production.
2. Discuss the importance of the six basic nutrients in relation to growth and production.
3. Discuss how ruminants and non-ruminants utilize food stuffs.
4. Discuss how nutrition effects production, growth, and reproduction.
5. Identify accepted feeding practices.
6. Demonstrate how to balance a ration for three species using local feeds utilizing the Pearson square
7. Interpret NRC (National Research Council) tables and apply the relevant information to the formulation of livestock rations.

### IV. Course Content

A. Nutrition - old and new

B. Plant and animal composition

- C. Nutrients and their functions
  - 1. Protein
  - 2. Carbohydrates
  - 3. Lipids
  - 4. Vitamins
  - 5. Minerals
  - 6. Water
- D. Feed analysis
- E. Digestion and absorption
  - 1. The non-ruminant (monogastric)
  - 2. The ruminant
  - 3. The avian
- F. Metabolism - blood, kidneys, liver, etc.
- G. Evaluation and classification of feedstuffs
  - 1. Physical Evaluation
  - 2. Proximate analysis
  - 3. Estimation of feed energy
  - 4. NRC Classifications of feeds
  - 5. Requirements for feed labels
- H. Maintaining the farm animal
  - 1. Feeding behavior
  - 2. Factors that affect feed intake
- I. Feeding for an outcome
  - 1. Growth
  - 2. Fattening
  - 3. Reproduction
  - 4. Production milk, wool and work
- J. Study of feed stuffs
  - 1. Manufacturing
  - 2. Processing
- K. Ration Formulation
  - 1. Balancing rations
  - 2. Least cost ration development

### **Laboratory Activities**

- 1. Given a specific livestock production scenarios, evaluate various feed options for:  
Palatability, Nutritional value and Economical feasibility
- 2. Ration Calculation
- 3. Feed components and analysis
- 4. Cost of gain calculation

## **V. Assignments**

### **A. Appropriate Readings**

Readings will include:

- 1. Portions of nutrient requirements of domestic animals - horses, beef, swine - National Academy of Sciences.
- 2. Feeds and Feeding manual - Hanson.
- 3. Selected readings from trade magazines.

### **B. Writing Assignments**

1. Problems from Feeds and Feeding workbook which require paragraph answers.
2. Ration to be balanced from instructor.

**C. Expected Outside Assignments**

1. Balance ration.
2. Understand lecture material.

**D. Specific Assignments that Demonstrate Critical Thinking**

Lectures, discussions and assignments will prompt students to develop the following critical thinking:

1. Develop logical sequences for solving problems.
2. Categorize data to yield results consistent to the goal.
3. Use data developed and collected to make management decisions consistent to pre-established goals.

**VI. Methods of Evaluation**

**Traditional Classroom Evaluation**

- A. Student will demonstrate problem solving techniques using proper procedures.
- B. Complete assignments on a given time schedule.
- C. Written exams and quizzes.

**Hybrid Evaluation**

All quizzes and exams will be administered during the in-person class time. Students will be expected to complete online assignments and activities equivalent to in class assignments and activities for the online portion of the course. Electronic communication, both synchronous and asynchronous (chat/forum) will be evaluated for participation and to maintain effective communication between instructor and students.

**VII. Methods of Delivery**

Check those delivery methods for which, this course has been separately approved by the Curriculum/Academic Standards Committee.

Traditional Classroom Delivery     Correspondence Delivery

Hybrid Delivery     Online Delivery

**Traditional Classroom Delivery**

Lecture, discussions, workbook problems, and quizzes and exams.

**Hybrid Delivery**

A combination of traditional classroom and online instruction will be utilized. Every semester, a minimum of 17 hours of class will be taught face-to-face by the instructor and the remaining hours will be instructed online through the technology platform adopted by the District. Traditional classroom instruction will consist of lectures, visual aids, discussions and group activities. Online delivery consists of instructor-generated information, readings, news communications, web links and activities as well as facilitation of forum based discussions and communications.

**VIII. Representative Texts and Supplies**

Hynd, Philip, *Animal Nutrition*, 2019, CABI, ISBN 9781789242911

**IX. Discipline/s Assignment**

Agricultural Production

**X. Course Status**

Current Status: Active

Original Approval Date: 2/27/1990

Revised By: Brian Wolf

Curriculum/Academic Standards Committee Revision Date: 11/03/2020

Revised for IPR, no change: 03/15/2022