

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.

Diversity Statement: Our commitment to diversity requires that we strive to eliminate barriers to equity and that we act deliberately to create a safe and inclusive environment where individual and group differences are valued and leveraged for the growth and understanding as an educational community.

Transfers to CSU/UC
C-ID AG-AS 132L

34 Hours Lecture, 51 Hours Lab, 68 Outside Class Hours, 153 Total Hours of Instruction
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

Individual Laboratory Activities may include but are not limited to:

- 1. Given a specific livestock production scenarios, evaluate various feed options for:
Palatability, Nutritional value and Economical feasibility
- 2. Feed identification
- 3. Ration Calculation
- 4. Feed components and analysis
- 5. 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

Term paper (topic choice, thesis statement, outline, bibliography, rough draft, final draft), homework, classroom discussion, essay, journals, lab demonstrations and activities, multiple choice quizzes, and participation.

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, audio/visual aids, demonstration, group exercises, guest speakers, lab, individualized programs and other as needed.

Hybrid Delivery

Hybrid modality may involve face to face instruction mixed with online instruction. A minimum of 1/3 of instruction, including 100% labs, will be provided face to face. The remaining hours will be taught online through a technology platform as adopted by the

district.

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: 10/03/2023

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