



AGS 45 - Feeds and Feeding

Catalog Description

Transfer Status: CSU

Unit(s): 3.00

Lecture: 51.00 Contact hours/102.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

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Course Description: This course is a study of the basic nutrients involved in animal nutrition: protein, energy, vitamins, minerals and feed additives and their utilization by the animal's body. An analysis of the feeding value of common feedstuffs in practical livestock rations will be completed. Students will be introduced to the formulation of balanced rations for species of livestock including least cost computer formulated rations.

Objectives

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

1. Identify feedstuffs common to livestock rations.
2. Use feeding tables and publications in analyzing feedstuffs.
3. Describe basic animal nutrients and their assimilation with the body.
4. Balance a ration for a variety of commercial livestock species.
5. Identify problems involved in practical feeding of livestock.
6. Evaluate economic factors and trends in feeding.
7. Identify various primary and by-product feeds, forms and processing techniques.
8. Apply changing nutritional requirements based upon animal physiological development.
9. Identify career requirements and potential opportunities leading to successful employment.

Course Content

Topic Titles / Suggested Time Topic		
	<u>Lecture</u>	
<u>Topics</u>		<u>Lec Hrs</u>
Introduction to Feeds and Feeding		1.00
Basic Nutrients		4.00
Ruminant Digestion		2.00
Non-Ruminant Digestion		2.00
Monogastric Digestion		2.00
Feedstuffs: Roughages, Concentrates, Supplement, Additives		6.00
Feedstuff Evaluation		4.00
Raton Balancing		3.00
Animal Requirements		4.00
Nutrient Deficiencies and Disease		3.00
Feeding Swine		4.00
Feeding Sheep		4.00
Feeding Beef		4.00
Feeding Dairy		4.00
Feeding Horses		4.00
Total Hours:		51.00

Methods of Instruction

- A. Discussion
- B. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- C. Lecture
- D. Reading Assignments

Methods of Evaluation

- A. Exams/Tests
- B. Papers

- C. Projects
- D. Homework
- E. Class participation

Examples of Assignments

Reading Assignments

1. Read the chapter on the gastrointestinal tract and be prepared to discuss the classification of digestive systems with the class.
2. Read the chapter on high-energy feedstuffs and be able to list key cereal grains and by-products available for ruminants as well as monogastrics.

Writing Assignments

1. Utilize trade journals or internet and list common feedstuffs available in California. Write a 2-3 page paper on the benefits of key cereal grains and alternative feeds in fattening feedlot cattle.
2. Utilize the internet to search companies that offer fodder systems, and then write a 3-4 page paper on operation and management of alternative feeding systems.

Out-of-Class Assignments

1. Use the internet to determine the potential by-products available, acquire pricing, and formulate a dairy ration.
2. Visit a dairy and interview owners regarding feedstuffs, feeding levels and pricing of their rations and be prepared to share results with class. Alternative options to complete this assignment will be identified in the instructions.

Recommended Materials of Instruction

Wu, G. (2026). Principles of Animal Nutrition. *Routledge*, 2nd. 9781032490885.

Zero Cost Textbook

Cherian, G. (2025). A guide to the principles of animal nutrition. Oregon State University. (OER).
<https://open.oregonstate.edu/animalnutrition/>

Minimum Qualifications

Agricultural Production
Agriculture (Masters Required)

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