

**University of Kentucky**  
**Independent Study Program**  
**Lexington, KY 40506**

**ASC 380: Feeds and Feeding**  
**Course Syllabus**

**23 Assignments**  
**3 Credit Hours**

### **Course Overview**

Feeds and Feeding is designed to introduce you to the concepts, principles, vocabulary, and skills needed to feed livestock effectively. You will not be a professional nutritionist at the end of this course, but you will have the basic information and skills to answer many day-to-day questions encountered when feeding livestock. This course is specifically designed for students who plan to become veterinarians, county agents, sales representatives, and other supporting positions for the livestock industry.

Feeds and Feeding covers the modern art and science of feeding animals. The course material explores the feed resources available to modern livestock producers, explains how animal nutrient requirements are determined, and demonstrates how the animal's nutrient requirements and the feed's nutrient content can be matched to provide adequate nutrition for production and maintenance.

### **Course Objectives**

By the end of this course, the student should be able to:

1. Explain how the nutrient content of any feed is determined, be able to find such values for any feed, and be able to use and explain those values when feeding animals.
2. Explain how the nutrient requirements of any animal are determined, be able to find such values for any animal, and be able to use and explain those values when feeding animals.
3. Visually identify and describe several common feedstuffs used in feeding animals.
4. Determine the most appropriate method for balancing a ration to meet the nutrient requirements of any animal and be able to find and use the resources necessary to accomplish that task.
5. Critique any ration, diet, supplement, feeding regime, feeding system, etc., and make an appropriate judgment of its value, usefulness, and efficiency in the feeding of any animal.
6. Carry on an intelligent conversation regarding the feeding of livestock with any member of the animal agriculture industry.

## **Course Materials**

- Text:** Basic Animal Nutrition and Feeding, 5th ed. 2005. W.G. Pond, D.C. Church, K. Pond, and P.A. Schoknecht, John Wiley & Sons, New York. ISBN: 0-471 -21539-2
- Lecture notes:** Contained in the course booklet, which also includes your assignments.
- Tables and programs:** Feeds and Feeding in the modern livestock industry requires the use of computers and extensive tabular data. All the programs and tables you will need to complete this course will be provided to you along with the directions for their use in the Tables Packet. You must have access to a computer with the ability to run DOS-based programs in order to complete the assignments for this course. You must also have access to the Internet to complete some assignments. Technical assistance via telephone will be available. You must return the Tables Packet to the University of Kentucky for course grade.
- Feeds study kit:** Mailed to students for study and must be returned to the University of Kentucky for course grade. Complete the Feeds Kit Request Sheet located in the booklet after Unit 6 to receive your study kit.

## **Course Instructor**

Dr. Austin H. Cantor

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## **About the instructor:**

Dr. Cantor is a native of Liberty, New York. He received B.S. degree in biochemistry from Cornell University and an M. A. degree in science education from Teachers College, Columbia University. After serving as a Peace Corps Volunteer in Chile for three years, he resumed graduate studies at Cornell University, where he earned a Ph.D. in nutrition.

Following several years at Ohio Agricultural Research & Development Center (Ohio State University) in Wooster, Ohio, Dr. Cantor joined the faculty of the Department of Animal Sciences of the University of Kentucky. He specializes in poultry nutrition and is involved in both research and teaching. His research involves vitamin, mineral and amino acid nutrition for laying hens and broiler chickens. Through UK's Distance Learning Programs, Dr. Cantor teaches Poultry Production using interactive television and Feeds and Feeding via the internet. He also teaches graduate courses in vitamin and mineral metabolism and nonruminant nutrition.

## Technical Assistance

If you have any questions or difficulties with course materials, including computer programs, contact the instructor.

## Tests and Other Assignments

This course will have two examinations:

Mid-Term	Comprehensive through Unit 11
Final	Comprehensive through Unit 23

Examinations will be administered according to the policies of UK Independent Studies Programs. ISP staff will work with students taking this course to arrange for monitored test-taking sites.

## Submitting Assignments

The questions and assignments you are to complete for each unit are interspersed, in context, within the lecture notes. Space is provided within the booklet for you to complete your work within the lecture notes. Write directly in the booklet and submit the entire unit for grading. The entire unit, with corrections, will be returned to you for reference. **All assignments must be completed and submitted in order as the material builds upon itself throughout the course. If you submit any assignment out of order, it will not be graded and will be returned to you for resubmission after you have completed all prior assignments.** You are strongly urged to make a copy of your submissions before putting them in the mail in case of damage or loss. If such loss does occur, **you will be responsible** for redoing and resubmitting the work.

## Grading Policy

A student earning the following numerical percentages will earn, at least, the letter grade shown:

A	100-90.0%
B	89.9%-80.0%
C	79.9%-70.0%
D	69.9%-60.0%
E	<60%

The assignments within the Units will constitute 60% of the final grade. The midterm and final examinations will each constitute 20% of the final grade.

- > **All examinations must be taken and all assignments must be completed to receive a grade for this course.**
- > **The feeds study kit delivered to you must be returned to the University of Kentucky to receive a grade for this course.**

**Plagiarism Policy (From section 6.3.1 of University Senate Rules):**

All academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, and self-expression. In cases where students feel unsure about a question of plagiarism involving their work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording, or anything else from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism.

Plagiarism includes reproducing someone else's work, whether it be a published article, a chapter of a book, a paper from a friend or some file, or whatever.

Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be. Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone.

When a student's assignment involves research in outside sources or information, the student must carefully acknowledge exactly what, where, and how he/she has employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content, and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be part of the public domain.

## Recommended Reference Materials

- Animal Feeding and Nutrition, 5th ed., 1982. M.H. Jurgens. Kendall-Hunt Publishing Co., Dubuque, IA.
- Applied Animal Nutrition: Feeds and Feeding, 1991. P.R. Cheeke. MacMillan Publishing Co., New York, NY.
- Feeds and Feeding; 4th ed., 1987. A.E. Cullison and R.S. Lowrey. Prentice Hall, Englewood Cliffs, NJ.
- Feeds and Nutrition, 2nd ed., 1990. M.E. Ensminger, J.E. Oldfield, and W.W. Heinemann. Ensminger Publishing Co., Clovis, CA.
- Forages: The Science of Grassland Agriculture, 4th ed., 1985. M.E. Heath, R.F. Barnes and D.S. Metcalfe, eds. Iowa State University Press, Ames, IA.
- Nutrient Requirements of Beef Cattle, 7th ed., 1996, National Research Council. National Academy Press, Washington, D.C.
- Nutrient Requirements of Cats, 1986. National Research Council. National Academy Press, Washington, D.C.
- Nutrient Requirements of Dairy Cattle, 6th ed., 1989. National Research Council. National Academy Press, Washington, D.C.
- Nutrient Requirements of Dogs, 1985. National Research Council. National Academy Press, Washington, D.C.
- Nutrient Requirements of Fish, 1993. National Research Council. National Academy Press, Washington, D.C.
- Nutrient Requirements of Goats, 1981. National Research Council. National Academy Press, Washington, D.C.
- Nutrient Requirements of Horses, 1989. National Research Council. National Academy Press, Washington, D.C.
- Nutrient Requirements of Poultry, 1994. National Research Council. National Academy Press, Washington, D.C.
- Nutrient Requirements of Sheep, 1985. National Research Council. National Academy Press, Washington, D.C.
- Nutrient Requirements of Swine, 10th ed., 1998. National Research Council. National Academy Press, Washington, D.C.

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<b>Unit</b>	<b>Pages</b>	<b>Subject</b>
1	1.1 - 1.8	Nutrition Review: Nutrients
2	2.1 - 2.18	Nutrition Review: Gastrointestinal Tracts <b>Submit Tables Packet Request Form</b>
3	3.1 - 3.18	Nutrition Review: Water, Vitamin, and Mineral Metabolism
4	4.1 - 4.21	Nutrition Review: Carbohydrate, Lipid, and Protein Metabolism
5	5.1 - 5.9	Nutrition Review: Energy Metabolism
6	6.1 - 6.18	Determining Nutrient Content of Feeds <b>Submit Feeds Study Kit Request Form</b>
7	7.1 - 7.13	Feeds: Roughages
8	8.1 - 8.7	Feeds: High Energy Sources
9	9.1 - 9.7	Feeds: Protein Sources
10	10.1 - 10.14	Feeds: Vitamins, Minerals, and Feed Additives
11	11.1 - 11.14	Feeds: Preparation and Processing <b>Take Midterm Examination</b>
12	12.1 - 12.25	Determining Nutrient Requirements of Animals
13	13.1 - 13.16	Factors Affecting Feed Intake
14	14.1 - 14.17	Diet Formulation: Pearson's Square
15	15.1 - 15.17	Diet Formulation: Algebraic Methods
16	16.1 - 16.16	Feeding Beef Cattle
17	17.1 - 17.29	Feeding Dairy Cattle
18	18.1 - 18.17	Feeding Sheep and Goats
19	19.1 - 19.14	Feeding Horses
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23	23.1 - 23.15	Feeding Cats and Dogs <b>Take Final Examination</b>