

ANIMAL SCIENCE (ANSC) 3375 - FEEDS & FEEDING, Spring 2007**

Instructor

Dr. Michael Brown

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Office Hours: Friday, 8 to 3 PM or by appointment

Graduate Teaching Assistant(s)

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Schedule

Lecture: Monday and Wednesday, 8:00 am to 8:50 am, ANS 103

Laboratory: Tuesday, 3:00 pm to 4:50 pm, ANS 103

HELC lab contact, Andrew White (7910)

Course Description

Definitions and general concepts of feeding and nutrition. Anatomy and physiology of the digestive tract. Feedstuff digestion, nutrient absorption and excretion of waste products. Nutrients and their metabolism. Feed evaluation, chemical composition, voluntary feed intake, digestibility. Feedstuffs used in animal diets. Feeding standards for domestic animals. Feed manufacturing and regulatory compliance. Manual and computer diet formulation. Applied aspects of feeding farm animals, with an emphasis commercially produced food animals.

Text: *Applied Animal Nutrition- Feeds and Feeding, 3rd Ed.* (2005; Prentice Hall) by Peter R. Cheeke is recommended. From time-to-time during the semester, references to particular journal articles and review papers may be provided.

Attendance/Absences

- A) Attendance at all lectures and laboratories is expected in order to meet the objectives of this course. Attendance will be recorded **in the first 5 minutes of class** at each laboratory and lecture and is a component of the final grade.
- B) If you have a pre-planned absence (e.g. judging trip or other commitment), you will be expected to notify the instructor in advance and take any quizzes or exams before the absence. **NO late assignments or quizzes will be accepted unless these arrangements have been made previously.** If you are on a judging team, it will be your responsibility to provide the instructor with a contest/travel schedule within the first two weeks of the semester.
- C) Make-up exams and quizzes will be available in the event of unforeseen absences (e.g., family emergency, illness). Please notify the instructor or teaching assistant(s) as soon as possible.

Objectives: To become acquainted with and learn important principles of nutrition and their applications to feeding animals and the feed industry. At the end of the semester, students enrolled in the course should be able to:

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- Describe and discuss the anatomy and physiology of the digestive tract of food-producing animals
- Have a complete knowledge of water, protein, energy, vitamin and mineral metabolism
- Have a complete knowledge of the factors involved in describing nutritional value of feedstuffs
- Formulate diets and supplements for domestic animals raised under different situations
- Discuss and recommend the appropriate feeding system for domestic animals according to a producer's needs, goals, and resources

Importance of the Course

Profitable feeding practices require an extensive knowledge of the fundamental concepts of animal nutrition and metabolism as well as the nutritional characteristics of available feedstuffs. Students interested in working with animals must understand and be able to apply the basic concepts of animal nutrition and diet formulation in order to be effective practitioners and leaders in the agricultural industry. Because of the expanding communication networks and the tendency towards global markets in products and commodities, it is necessary for the students to know the feeding systems and practices as well as the feedstuffs and type of products of potentially competing foreign countries.

Course Format

General. There will be two, 50-minute lectures and a one-hour and fifty-minute laboratory per week. In lectures, students will be taught the basic principles of animal nutrition and feeding with emphasis on digestive physiology and nutritional biochemistry. In the laboratories, students will become familiar with chemical analyses (proximate and Van Soest), feedstuff description, and diet formulation. Each week, the laboratory assignment will be due at the end of the laboratory period unless otherwise indicated.

Lecture and laboratory handouts. Lecture notes requiring some 'fill-in-the-blank' and lecture slides will be conveniently provided on CD. Laboratory handouts will be distributed in lab, and the lab key will be posted weekly on my website. It will be the responsibility of the student to print lecture notes to bring to class.

Students will access the lab keys using Netscape or Internet Explorer (browser software) and Microsoft Word as follows:

1. Type in my homepage address given on page 1 and press 'enter', select Teaching Responsibilities, select Feeds and Feeding, and select the appropriate item.
2. From the WT homepage (www.wtamu.edu), select Research, select Feedlot Research Group, select Faculty and Staff, scroll down to my entry and select my name, select Teaching Responsibilities, select Feeds and Feeding, and select the appropriate item. The key can be either printed or saved to a disk.

Problems with the University server may be encountered from time to time. When this happens, students will not be able to get the desired destination at that time. Students will need to continue to attempt to access the information until successful; I suggest approximately 30-minute intervals.

Assessment. The lecture and laboratory will be graded together. Quizzes will be administered in the lecture and lab sections, but on alternate weeks. Thus, the lecture final exam will be the final quiz and will not be comprehensive. However, a laboratory final (open note) will be administered during the last lab period. Important dates throughout the semester are listed on the ‘Tenative lecture and laboratory schedule’.

	<u>Points</u>	<u>% Total</u>
Grading: Lecture quizzes (7)	560	49
Laboratory Assignments (12)	240	21
Laboratory Quizzes (6)	300	26
Laboratory Practical	50	4
TOTAL	1150	100
Attendance bonus		
≤1 unexcused absence	50	
≥2 unexcused absences	10	

Individual grades will be assigned based on:

100.0 - 90.0% A, 89.9 - 80.0% B, 79.9 - 70.0% C, 69.9 - 60.0% D, ≤ 59.9% F

Scholastic Dishonesty Policy

Refer to Appendix XVII (Academic Integrity Code) of the Faculty Handbook, located at www.wtamu.edu/academic/facultyhb/page/app.htm, for a description of procedures and implications of this policy.

Other Important Dates

January 22	Last day to add a course
March 1	Last day to apply for Spring graduation
March 2	Last day to drop for a guaranteed ‘X’
March 31	Last day to drop/withdraw

Students with Disabilities

West Texas A&M University seeks to provide reasonable accommodations for all qualified persons with disabilities. This University will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student’s responsibility to register with Disability Support Services and to contact the faculty member in a timely fashion to arrange for suitable accommodations.

Feel free to contact Student Disability Services (VHAC 218) at 651-2335 with any questions about the Americans with Disabilities Act (ADA) of 1990, and/or Section 504 of the Rehabilitation Act of 1973.

Tentative Lecture and Laboratory Schedule

Lecture			Laboratory			Assessment
Day	Date	No.	Topic	No.	Topic	
Wed	Jan 17	-	Syllabus and introduction	-	XXXXXXXXXXXXXXXXXXXX	-
Mon	Jan 22	1	Nutrient categories, functions	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Jan 23	-	XXXXXXXXXXXXXXXXXXXX	1	Conversions and units	-
Wed	Jan 24	2	Nutrient functions, metabolism	-	XXXXXXXXXXXXXXXXXXXX	-
Mon	Jan 29	3	Establishing requirements	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Jan 30	-	XXXXXXXXXXXXXXXXXXXX	2	Ingredient composition	-
Wed	Jan 31	4	Nutrient analyses	-	XXXXXXXXXXXXXXXXXXXX	Lecture Quiz 1
Mon	Feb 5	-	Review lecture quiz	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Feb 6	-	XXXXXXXXXXXXXXXXXXXX	3	Diet formulation methods	Lab Quiz 1
Wed	Feb 7	5, 6	Cereal grain structure and nutrient content	-	XXXXXXXXXXXXXXXXXXXX	-
Mon	Feb 12	5, 6	Cereal grain structure and nutrient content	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Feb 13	-	XXXXXXXXXXXXXXXXXXXX	4	Review laboratory 1 and 3	-
Wed	Feb 14	7	Cereal grain processing	-	XXXXXXXXXXXXXXXXXXXX	Lecture Quiz 2
Mon	Feb 19	-	Review lecture quiz 2	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Feb 20	-	XXXXXXXXXXXXXXXXXXXX	5	Diet formulation	Lab Quiz 2
Wed	Feb 21	8	Practical problems with cereal grain feeding	-	XXXXXXXXXXXXXXXXXXXX	-
Mon	Feb 26	9, 10	Grain byproducts, other	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Feb 27	-	XXXXXXXXXXXXXXXXXXXX	6	Diet formulation	
Wed	Feb 28	9, 10	Grain byproducts, other	-	XXXXXXXXXXXXXXXXXXXX	Lecture Quiz 3
Mon	Mar 5	-	Review lecture quiz 3		XXXXXXXXXXXXXXXXXXXX	-
Tues	Mar 6	-	XXXXXXXXXXXXXXXXXXXX	7	Calculation review	Lab Quiz 3
Wed	Mar 7	11	Oilseed meal protein sources	-	-	
Mon	Mar 12	-	Spring break	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Mar 13	-	XXXXXXXXXXXXXXXXXXXX		Spring break	
Wed	Mar 14		Spring break	-	XXXXXXXXXXXXXXXXXXXX	-

Tentative Lecture and Laboratory Schedule (Continued)

Lecture				Laboratory		
Day	Date	No.	Topic	No.	Topic	Assessment
Mon	Mar 19	12	Animal protein sources	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Mar 20	-	XXXXXXXXXXXXXXXXXXXX	8	Feeding swine	Lab Quiz 4
Wed	Mar 21	13,14	NPN sources and utilization	-	XXXXXXXXXXXXXXXXXXXX	-
Mon	Mar 26	13,14	NPN sources and utilization	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Mar 27	-	XXXXXXXXXXXXXXXXXXXX	9	Feeding beef females	-
Wed	Mar 28	15	Forage chemistry, structure	-	XXXXXXXXXXXXXXXXXXXX	Lecture Quiz 4
Mon	Apr 2	-	Review lecture quiz 4	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Apr 3	-	XXXXXXXXXXXXXXXXXXXX	10	Feeding growing cattle	Lab Quiz 5
Wed	Apr 4	16,17	Types of forages	-	XXXXXXXXXXXXXXXXXXXX	-
Mon	Apr 9	16,17	Types of forages	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Apr 10	-	XXXXXXXXXXXXXXXXXXXX	11	Supplements and premixes	-
Wed	Apr 11	18,19	Forage processing	-	XXXXXXXXXXXXXXXXXXXX	Lecture Quiz 5
Mon	Apr 16	18,19	Forage harvesting, processing	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Apr 17	-	XXXXXXXXXXXXXXXXXXXX	12	Feeding horses	Lab Quiz 6
Wed	Apr 18	20	Mineral sources, supplements	-	XXXXXXXXXXXXXXXXXXXX	-
Mon	Apr 23	21	Vitamin sources, supplements	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	Apr 24	-	XXXXXXXXXXXXXXXXXXXX	13	Supplement manufacture	-
Wed	Apr 25	22,23	Feed additives	-	XXXXXXXXXXXXXXXXXXXX	Lecture Quiz 6
Mon	Apr 30	-	Review lecture quiz 6	-	XXXXXXXXXXXXXXXXXXXX	-
Tues	May 1	-	XXXXXXXXXXXXXXXXXXXX	-	Lab practical	-
Wed	May 2	-	Review	-	XXXXXXXXXXXXXXXXXXXX	-
Mon	May 7	-	Final lecture quiz (8 to 10)	-	XXXXXXXXXXXXXXXXXXXX	Lecture Quiz 7