

ANSI 3543

Principles of Nutrition

Fall, 2009

Instructors: Scott Carter
212B Animal Science
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145 FAPC
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Prerequisites: Chem 1215 or equivalent

Course Structure: 3 class periods/week (MWF 10:30-11:20)

Course Objectives:

Familiarize students with the principles of nutrition as they pertain to animals and the life process, including:

1. Define the nutrients, classification, and importance in life,
2. Discuss differences in digestive tract physiology among mammals and avians and why the digestive tract dictates what is consumed,
3. Understand the processes of nutrient digestion and absorption,
4. Understand nutrient metabolism, and
5. Integrate material to form a complete picture of food consumption, digestion, absorption, metabolism, and ultimately growth of an animal.

Text: No text is required. All information will be given through lecture notes. Recommended texts include Animal Nutrition (5th Ed.) by McDonalds, Edwards, Greenhalgh, and Morgan or Basic Animal Nutrition and Feeding (4th Ed.) by Pond, Church, and Pond.

Class Notes: All course materials (lecture notes) will be provided on the Desire-2-Learn course website. You may download these, print them, and bring them to class. Course content will be uploaded periodically during the semester.

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|--------------------|--------------------------------|----------------------------------|
| Evaluation: | 6 Quizzes – 120 pts (16.7%) | Grading: A – 90 and above |
| | 4 Exams – 400 pts (55.6%) | B – 80 – 89.99 |
| | 1 Final Exam – 200 pts (27.7%) | C – 70 – 79.99 |
| | | D – 60 – 69.99 |
| | Total = 720 pts | F – below 59.99 |

Your grade will be based on points accumulated during the semester. Additionally, the instructor reserves the right to add points to grades to reward classroom participation, good attitudes and appropriate behaviors which contribute to the learning process.

Quizzes: There will be a minimum of 8 quizzes (20 points each) given during the duration of the semester. They will be **announced**. Quizzes will cover topics presented in lecture and will be included as questions during the regular scheduled exams. Quizzes will be mainly multiple choice questions. You can drop 2 of your lowest quiz grades.

Exams: There will be four hour exams during the semester (closed book). Semester exams are not accumulative per se but principles learned earlier in the semester will be used throughout the remainder of the class. Exams will be multiple choice, true false, and fill in the blank.

A #2 pencil will be required for all exams and quizzes. They will not be provided.

| Exam Schedule. | Points | |
|-------------------------------|---------------|--|
| Exam 1. September 11, 2009 | 100 | |
| Exam 2. October 07, 2009 | 100 | |
| Exam 3. November 6, 2009 | 100 | <i>This a tentative schedule, dates subject to</i> |
| Exam 4. November 23, 2009 | 100 | <i>change. Will be announced in class.</i> |
| Final. Dec.9, 2009 (10:00 am) | 200 | |

Make-Up

Examinations: Examination absences must be **approved in advance**. **Please submit absence requests in writing**. Unapproved absences for exams will be counted as zeros. University sponsored events, severe illness, and serious family issues are the only excuses for missing an exam. In those instances, a makeup exam will be available.

Attendance: Attendance is *strongly recommended*.

Important

Dates: Last day to add a class – Monday, August 24
Last day to drop a class with no grade – Monday, August 24
Last day to drop a course with an automatic grade of “W” – Friday, November 06

Academic

Integrity: Oklahoma State University is committed to the maintenance of the highest standards of integrity and ethical conduct of its members. This level of ethical behavior and integrity will be maintained in this course. Participating in a behavior that violates academic integrity (e.g., unauthorized collaboration, plagiarism, multiple submissions, cheating on examinations, fabricating information, helping another person cheat, unauthorized advance access to examinations, altering or destroying the work of others, and fraudulently altering academic records) will result in your being sanctioned. Violations may subject you to disciplinary action including the following: receiving a failing grade on an assignment, examination or course, receiving a notation of a violation of academic integrity on your transcript, and being suspended from the University. You have the right to appeal the charge. Contact the Office of Academic Affairs, 101 Whitehurst, 405-744-5627, academicintegrity.okstate.edu.

Special

Accommodations: According to the Americans with Disabilities Act, each student with a disability is responsible for notifying the University of his/her disability and requesting accommodations. If you think you have a qualified disability and need special accommodations, you should notify the instructor and request verification of eligibility for accommodations from the Office of Student Disability Services. Please advise the instructor of your disability as soon as possible, and contact Student Disability Services, to ensure timely implementation of appropriate accommodations. Faculty have an obligation to respond when they receive official notice of a disability but are under no obligation to provide retroactive accommodations. To receive services, you must submit appropriate documentation and complete an intake process during which the existence of a qualified disability is verified and reasonable accommodations are identified. Call 405-744-7116 or go to www.okstate.edu/ucs/stdis/.

Other Points:

Remove hats during class period

Turn off cell phones, no cell phones during quizzes or exams. If you need a calculator, please bring one to class, cell phones will not be allowed.

No talking during class, if you have a question, please ask. Otherwise, talking disrupts the class and I will be forced to ask you to leave or assign you a seat for the semester.

Please see me if you have questions. You are welcome to come by the office at any time. I will be happy to assist you if time permits.

I will not *GIVE* grades in this class, you will *EARN* a grade, much like in the future when you will *EARN* a salary and your parents will be happy!!

This class can be difficult. It is important to keep up with the material and ask questions.

If you have problems, seek my assistance immediately. Do not wait until the last week of the semester.

Nutrition: Why important (Why do I have to take this class?)

Cells need specific nutrients to survive. Without these nutrients, cells will die, with the final outcome of death. You are taking this course because you will, most likely, be involved with animals in the future. Animals are dependent upon us for care and well being. We all want our farm or companion animals to live long, healthy, and productive lives. Without the correct nutrients, serious complications can arise for those animals within our care. Thus, a good understanding of the nutrients and how they are utilized by the animal is critical for proper management and care.

A little bit about your instructor:

Dr. Scott Carter grew up in the small towns of Maysville, Hooker, and Ninnekah, OK. Dr. Carter's father was an Agriculture Education (FFA) teacher at each of these schools. Thus, he was around farm animals throughout his youth. Upon graduation from Ninnekah High School, Dr. Carter attended Oklahoma State University where he obtained a B.S. degree in Animal Science. Dr. Carter was a member of the Block and Bridle Club and worked all 4 years at the OSU Swine Farm. He then attended the University of Kentucky obtaining a Ph.D. in monogastric nutrition. Dr. Carter joined the faculty of OSU in 1997 and conducts research in swine nutrition. He also teaches ANSI 3543, 4643, and 5773. Dr. Carter's research interest quantifies the effects of diet (nutrition) on swine growth, carcass traits, health, and waste management. His graduate students have gone on to have careers in academia, private industry, and the pet-food industry. Dr. Carter is married and "manages" 5 dogs, 1 horse (the wife's baby), 30 sheep (because they eat grass), and a few chickens (no room for cows). He has been known to eat and drink anything during ANSI 3543 for nutrition learning opportunities.

Let's have a good semester ☺

Lecture Topics

Introduction to Nutrition
The Nutrients
The Gastrointestinal Tract & Nutrition
Digestion in the Pig
Avian Digestion
Digestion in the Ruminant
Digestion in the Horse
Water
Carbohydrates
Carbohydrate Classification
Carbohydrate Digestion
Metabolism of Carbohydrates
Lipids, Lipid Classification
Nutritional Function of Lipids
Digestion, Absorption and Transport of Lipids
Metabolism and Physiology of Lipids, Bile function
Proteins, Protein Classification and Functions
Digestion of Proteins
Metabolism of Proteins
Sources of Proteins
The Macrominerals, The Microminerals
Vitamins
Determination of Nutritive Value of Feeds
Measurement of Feed and Nutrient Utilization & Requirements
Feed Classification
Other items as time permits