

ABILENE CHRISTIAN UNIVERSITY
AGRICULTURAL AND ENVIRONMENTAL SCIENCES
GENERAL ANIMAL SCIENCE (ANSC 111-01)

Instructor: Dr. F. N. Mhlanga
Professor of Animal Science
Agricultural and Environmental Sciences

Office Hours: M T 1:00 – 4:00 PM
TR 2:00 – 3:00 PM
Or by appointment

Strengths: Responsibility, Self Assurance, Learner,
Includer, Harmony

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ACU MISSION:

To educate students for Christian service and leadership throughout the world

CAS:

Our mission is to educate students for worldwide Christian service and leadership through programs of study and other learning experiences that blend a liberal arts education with professional and career education.

A & E MISSION:

We will educate students for Christian stewardship of sustainable agricultural and environmental systems throughout the world.

Course Description:

A survey of factors involved in the production and marketing of livestock. Labs will include judging and production skills.

Course Audience

This is an introductory course to animal agriculture and is required of all agriculture majors.

Pre-requisites:

There are no college prerequisites.

Course Goal:

This course is designed to prepare students to understand management practices in livestock production by development of a scientific knowledge of the biology of domestic species of animals. The course will acquaint students with the basic scientific fundamentals of livestock production, including feeding and nutrition, reproduction, genetics, selective breeding, health, management, and marketing of major and minor species. Labs and field trips will provide opportunities to gain practical knowledge and to better understand the lecture material.

Student Learning Outcomes

Students will

- Explore and gain understanding of the concepts of animal nutrition, reproduction and genetics
- Acquire skills necessary to analyze and interpret data from animal studies as presented in class or laboratory and assess how information can support or modify theories
- Utilize the scientific method to assess hypotheses tested in laboratory experiments.
- Explore how scientific thinking and viewpoints can inform and shape understanding of current issues related to animal/human interactions in such areas as food quality and safety, animal welfare/rights and human health issues

Course Competences

Students will

- Develop a basic understanding of the role of livestock in agriculture (U.S. and global).
- Become familiar with standard operating procedures used in livestock production
- Become familiar with terminology used in animal science as it relates to the industry, management practices, equipment and animals.
- Develop an understanding of animal species and breeds that comprise the livestock industry and their relative importance from economic and social perspectives.
- Become familiar with some of the food and other products derived from animals and animal by-products.
- Know the major components of livestock feeds and be able to compare similarities and differences in feed digestion by cattle, sheep, swine, and horses
- Develop a basic understanding of animal growth, nutrition, reproduction, behavior and genetics.
- Be familiar with the characteristics of the primary breeds of farm livestock.
- Understand principles underlying the selection of replacement stock for continued genetic improvement in the herd or flock

Course Format

This is a three semester hour credit course which includes two lecture hours and a laboratory session each week. Lectures will include an overview of the livestock industry and specific technical details about industry structure, products produced, and the biological systems of animals (i.e. heredity, reproduction, nutrition, and health). To achieve course goals, factual information will be provided in lectures and reading assignments, in combination with “hands-on” animal contact sessions with multiple species of farm animals. Students should expect to get their hands, and sometimes their feet dirty, while undertaking such learning experiences.

Resources

- Text: Scientific Farm Animal Production by T. G. Field and R. E. Taylor. 2008. 9th Ed. Prentice-Hall.
- Students wishing a **free set of class notes** are invited to attend all lectures and to diligently copy down every word spoken, written, printed or otherwise displayed

Livestock Breeds on the Internet

Oklahoma State University has created a site on the World Wide Web that has pictures of breeds of livestock with information about each of the breeds. Most breeds of livestock are there. Either of the two links below will get you to the site. The first link has only the breeds and a short discussion about what a breed is, why we want to preserve breeds having minor contributions to mankind, and why we raise livestock even if they compete with humans for food. The second link is a "virtual livestock library"....it has links to the breeds plus lots of other information relative to livestock production in the United States. Go visit the site!

- **Oklahoma State Breeds of Livestock** : <http://www.ansi.okstate.edu/breeds/>

Virtual Livestock Library : <http://www.ansi.okstate.edu/library/>

Weekly Quizzes:

In order for us to communicate effectively in the field of animal science, it is necessary to have an understanding of the terms and concepts used in the field. Therefore, we will have short weekly chapter quizzes. Each quiz will be given at the beginning of each lab class on Wednesday afternoon. You will be given five (5) minutes to complete the quiz over previously covered materials. All quiz scores will be totaled and a percentage grade calculated. No make-up quizzes will be given. Students who miss a quiz will receive a zero for that quiz with no opportunity for makeup.

Exams:

Three hour exams will be given during the semester. Each exam will cover new material given since the previous hour exam. Exams will include a variety of questions including but not limited to multiple choice, short essay, true/false, fill in the blank, etc. All examinations are closed book; notes may not be used.

Term paper:

A term paper concerning a current issue in animal agriculture will be written during the semester. See attachment for instructions

Final Examination:

A comprehensive final examination will be given at the end of the semester. The exam will have an extra emphasis on the last material covered in class

Spelling:

All livestock terms including breeds must be spelled correctly on exams and weekly quizzes. One-half point will be deducted for each misspelled term. Livestock breeds must be capitalized.

Laboratory:

The laboratory session is a requirement for this class. No grade will be given without satisfactory completion of all laboratory assignments. A series of quizzes and group assignments will be given during lab. There is no opportunity for a student to make-up laboratories. Thus, every effort should be made to attend the scheduled labs. A final grade for the laboratory will contribute to the final course grade as shown below.

Course Grade Composition:

Your grade will be computed on the following basis

Activity	Value
Quizzes	15%
Semester exams	35%
Term paper	10%
Lab	20%
Final Exam	20%

Grading System:

Each activity (quizzes, exams paper, etc) will be graded on the basis of 100%. Weighted averages will be computed at the end of the semester. The grading system for the course is given in the following table.

% Range	Grade
90 – 100	A
80 < 90	B
70 < 80	C
60 < 70	D
< 60	F

Attendance Policy:

In working environments, employees who are often absent from, or tardy to, work do not enjoy long-term employment, regular pay increases, or good professional reputations. Attendance in both lecture and laboratory is required. **Because the pace of this course is quite rapid, you cannot expect to do well if you frequently miss class.** You will be dropped from the course if you miss 20% of the class meetings, and you will be assigned a grade of WF. This translates into 6 absences. Absences from laboratory will result in zero grades for missed labs and consequently an overall lower score. No make-up labs will be given. Any absences from lecture usually are reflected in lower grades. If a student misses more than four lectures, his grade will be lowered one (1) letter grade for each additional absence. You are late to class if you arrive five minutes after the scheduled start time. Every three late arrivals will be counted as one absence. You will be asked to initial a daily attendance roster for class as well as lab. If you fail to sign the roster, you will be counted absent even if you are in attendance. **It is your responsibility to sign the roll.**

If you plan to miss class to participate in a University-sponsored activity, you must provide your instructor a written notice signed by your sponsor seven (7) days in advance. These are approved absences that are not counted towards your absence accumulation. Absences due to illness with a doctor's signed excuse will also not be counted. In any case, you will still be responsible for all notes and information missed as the result of your absence. Your instructor will not hand out course materials more than once, so you should plan to obtain them elsewhere.

Academic Integrity:

Violations of academic integrity and other forms of cheating, as defined in ACU's Academic Integrity Policy, involve the intention to deceive or mislead or misrepresent, and therefore are a form of lying and represent actions contrary to the behavioral norms that flow from the nature of God. Violations will be addressed as described in the Policy. While the university enforces the Policy, the most powerful motive for integrity and truthfulness comes from one's desire to imitate God's nature in our lives. Every member of the faculty, staff and student body is responsible for protecting the integrity of learning, scholarship and research. The full Policy is available for review at the Provost's office web site (<http://www.acu.edu/campusoffices/provost>) and the following offices: provost, college deans, dean of campus life, director of student judicial affairs, director of residential life education and academic departments.

Classroom Management

In order to maintain decorum and to optimize the learning environment for all members of the class, certain classroom management policies must be adhered to:

- If you sleep in class/lab you will be asked to leave and you will be counted absent.
- If you walk out of class/lab without returning, you will be counted absent (obviously, exceptions will be made if you become ill or have made a prior arrangement with the instructor).
- Disruptive behavior will not be tolerated. This includes playing games, writing email, engaging in instant messaging, or similar activities during class or lab periods. If you disrupt the class, you will be asked to leave and will be counted absent.
- The use of cell phones or pagers is not permitted in class or lab.
- Headgear (e.g., caps or hats) is to be removed by men and women upon entering class
- Students are expected to conduct themselves at all times, whether in lecture or lab or on class trips, in accordance with the policies outlined in the ACU Student Guide.

Communications

To facilitate consistency in communications of courses requirements, assignments, and general information, and to make the course as paperless as possible, your instructor will regularly communicate with you via email using your ACU email address. You are encouraged to check your ACU email everyday for messages from your instructor.

Students with Disabilities

Abilene Christian University is committed to providing a learning atmosphere which reasonably accommodates qualified persons with disabilities. If you feel you have a disability which may impair your capacity to successfully complete this course, please contact the Director of Disability Services (674-2667) in Alpha Academic Services. Student Disability Services assists students with disabilities in obtaining appropriate academic accommodations.

Strategy for Success

This course is not a spectator sport! You should expect this class to be challenging and time-consuming. A lot of material

will be covered in a short period. You will undoubtedly be confused at times; and at others you will be lost. Do not be afraid

to seek help if you need it. Good sources of help are friends and other students, paid tutors, and your instructor. To do well in this class, you must budget sufficient time to read, study, and complete the assignments. **Not all the material you will need to pass the course will be presented in class!**

The students who are most successful in this course are those who:

- are self-motivated and maintain a positive, success-driven attitude;
- do not miss class/lab or sleep in class/lab;
- are knowledgeable of the syllabus, course requirements, and instructor's expectations;
- consistently and thoroughly read their textbooks and consult other library materials;
- are well organized and take good notes;
- communicate with their instructor and seek help on a regular basis;
- attempt every assigned problem and turn in all assignments on time;
- actively participate in the class discussion; and,
- commit sufficient study resources to the course and do not fall behind.

Tentative Course Schedule and Material Coverage General Animal Science: ANSC 111-01

Date	Topic	Reading assignment
August		
24	Introduction/Animal Contribution to human needs	Chapter 1
26	Contribution to human needs	Chapter 1
31	Livestock and Poultry Industry	Chapter 2
September		
2	Quiz /Livestock and Poultry Industry	Chapter 2
7	Red meat products, nutrients and nutrient density	Chapter 3
9	Quiz / Milk and Milk products: composition (fat, protein, SNF,) quality tests,	Chapter 4
14	By-products of meat animals Market classes and quality grades of livestock, cuts of meat, composition of meat	Chapter 7 {not covered in class} Chapter 8
16	Quiz / Market classes and quality grades of livestock, cuts of meat, composition of meat.	Chapter 8
21	Visual evaluation	Chapter 9
23	Exam I	
28	Reproduction: female and male reproductive anatomy	Chapter 10
30	Quiz / Reproduction, puberty, estrus, endocrine control of reproduction, gestation, parturition	Chapter 10
October		
5	Reproductive Biotechnologies: Artificial insemination, estrus synchronization, multiple ovulation and embryo transfer	Chapter 11

7	Quiz/ Genetics: DNA, genes, alleles, chromosomes, genotypes, phenotypes, punnet squares	Chapter 12
12	Genetics; selection, heritability, generation intervals, breeding values, genetic progress	Chapter 13
14	Quiz/ Genetics: Inbreeding, linebreeding, outcrossing,	Chapter 14
19	Genetics: crossbreeding	Chapter 14
21	Quiz/ Nutrition: major nutrients: water, CHO, lipids, proteins, minerals, vitamins, essential and non-essential nutrients	Chapter 15
26	Nutrition : digestibility values, proximate analysis of feeds for moisture, dry matter, crude protein, nitrogen free extracts, crude fiber, ash	Chapter 16
28	Exam II	
November		
2	Nutrition: Comparative digestive anatomy and physiology Digestion, absorption and assimilation:	Chapter 17
4	Quiz Animal Health: Diseases defined, classification of diseases, causes, control, Biosecurity	Chapter 18
9	Animal Health: Diseases defined, classification of diseases, causes, control, Biosecurity	Chapter 20
11	Quiz/ Environmental Adaptation: Heat stress, cold stress, physiological and physical adaptations, management options	Chapter 21
16	Environmental Adaptation: Heat stress, cold stress, physiological and physical adaptations, management options	Chapter 26
18	Growth & development: prenatal and postnatal growth, growth curves, fat, muscle and bone growth, factors affecting growth:	Chapter 28
23	Exam III	
25	Thanksgiving	
30	Growth & development: prenatal and postnatal growth, growth curves, fat, muscle and bone growth, factors affecting growth :	Chapter 29
December	December	December
2	Review:	Chapters 34
7	Dead day: Optional review	
10	Comprehensive Final Exam	10:00-11:45am

TERM PAPER

A term paper concerning a current issue in animal science will be written during the semester. The grade will be determined by subjective evaluation of how well you achieve the purpose and objectives and meet the minimum requirements criteria listed below.

DUE DATES

Topic	September 28, 2009
Rough Draft	October 26, 2008
Finished Paper	November 30, 2009

PURPOSE AND OBJECTIVE

The purpose and objective of this assignment is to have you explore in some detail a current issue in animal science. This is not intended to be an exhaustive treatment of the topic. You will be expected to state the issue in enough detail that your classmates who are unfamiliar with the subject could understand what the issue is without having to look up your references. Describe the significance of this issue to the animal industry and ultimately to the American consumer. Assess the pros and cons if the issue is a controversial one. Discuss the ethical implications surrounding the issue and state your ethical position concerning this topic.

MINIMUM REQUIREMENTS

Number of pages: 8 pages, typed, double-spaced, 10-point deduction for each partial page short,
Font: Times New Roman, no larger than 12 pt, 1 inch margins maximum.
References 15 fully documented references must be included but do not count toward the 8 page requirement (Textbook does not count). At least five references should come from primary literature.

Submit by due date: 10 point deduction for each day late

Papers Must be submitted by drop box or email.

A 5-point deduction from final grade will be made if either the topic or rough draft is late. Submit by email or drop box.