

ANSI 4803 – Fall 2008
Animal Growth and Performance
COURSE OUTLINE

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Prerequisite:

An upper division course in animal science.

Course Objectives:

To develop an understanding of factors that influence prenatal and postnatal growth in farm animals.

To evaluate endocrine control of body functions and to explore how alterations in the endocrine system might alter animal performance and/or composition.

Course Outline:

I. Growth and Development

A. Methods to measure

II. Prenatal Growth and Development

A. Embryonic development

B. Placental function – nutrition, respiration and circulation

C. Parturition and changes that occur in the fetus

D. Factors influencing growth and development

a. Genetic, Maternal, Nutrition of Mother, Litter size, Sex

III. Endocrine Control of Body Functions

A. Location of endocrine glands, hormone produced, control of hormone secretion, and function of hormones in growth and production

1. Hypothalamus

2. Pituitary

3. Growth hormone and its effects on performance

a. Responses to exogenous growth hormone

b. Transgenic animals with growth hormone genes

4. Thyroid

5. Parathyroid

6. Pancreas

7. Adrenal

8. Ovary

9. Testis

B. Growth promoters – steroid hormones

1. Mechanisms of action

2. Effects on daily gain, feed efficiency and composition

3. Compounds in use today; application

4. Regulation of the use of growth promoters

D. β -Adrenergic agonists

E. Buller steers

IV. **Postnatal Growth and Development**

- A. Rate of growth and development of various tissues
- B. Growth patterns
 - 1. Cattle
 - 2. Swine
- C. Factors influencing growth and development
 - 1. Nutrition
 - a. Effects of restriction
 - b. Composition of gain
 - c. Lactation
 - d. Compensatory growth
 - 2. Sex
 - 3. Genetics

V. **Environmental Influences on Livestock**

- A. Effect of temperature on growth
 - 1. Physiological responses to ambient temperature
- B. Influence of humidity and light on growth and body function

Discussions Sessions – Optional

Discussion sessions are scheduled for one evening before each exam at 8:30 pm in AN SCI 125. These sessions are optional and offer a time to ask questions and review material presented in lectures.

Thursday, September 4

Tuesday, September 23

Thursday, October 16

Tuesday, November 11

Monday, December 8

Exams:

- Exam 1 September 8, Monday
- Exam 2 September 26, Friday
- Exam 3 October 22, Wednesday
- Exam 4 November 12, Wednesday
- Final exam December 10, Wednesday, 8:00 am

Make-up exams will not be given. The three highest grades on the four hour exams will be used to calculate the course grade. If an exam is not taken, the other three exams will be used to calculate the grade.

Graduate Credit:

An additional discussion question will be included on each exam for students taking the course for graduate credit.

Grading Procedure:

The following procedure will be used to determine the course grade:

Grades:	Three 100-point exams	300 points
	Final exam	150 points
	Reading Assignments	100 points
	Written report or project	<u>100 points</u>
		650 points

Grading Scale: 90% = A; 80% = B; 70% = C; 60% = D; and less than 60% = F.

Attendance: Necessary

Text: There are no books to purchase. Reading assignments from reference books or research papers in scientific journals will be assigned. The assignment will be related to topics discussed in class.

Each week a reading from a reference book or a research paper in a scientific journal will be assigned. The readings will be reviewed and discussed in class on Fridays. The discussions will be preceded by 12 quizzes (each worth 12 points). The maximum total points for quizzes (100 points) can be achieved with 8.5 quizzes (8.5 x 12 = 100 points) or by earning fewer points on each quiz and taking more quizzes.

Please see <http://osu.okstate.edu/acadaffr/aa/syllabusattachment-Fall.htm> for information on dates for actions and dropping, or academic integrity.

Student Disability: If any member of this class feels that he/she has a disability and needs special accommodations of any nature whatsoever, the instructor will work with you and the Office of Disabled Student Services, 326 Student Union, to provide reasonable accommodations to ensure that you have a fair opportunity to perform in this class.

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 (F!), 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.

OSU Student Rights and Responsibilities Governing Student Behavior.

III. General Student Disciplinary Policies

B.1. Plagiarism: The representation of previously written, published or creative work as one's own. Wherever the wording, arguments, data, design, etc., belonging to someone else are used in a paper, report, oral presentation, or similar academic project, this fact must be made explicitly clear by citing the appropriate references or sources. The reference wording must fully indicate the extent to which any part or parts of the project are attributed to others. Paraphrased materials must be acknowledged in the same manner as material that is used verbatim.

In scientific writing, direct quotations are not used. Therefore, sentences or phrases (word for word) from previously written papers cannot be used in your paper. Previous finding should be expressed in your own words and the source should be given as a reference.