

**INSTRUCTOR:** Robert P. Wettemann  
114C Animal Science  
x49267  
bob.wettemann@okstate.edu

**PREREQUISITES AND SUPPORT COURSES:** Graduate standing or a course with emphasis on animal reproduction.

**COURSE OBJECTIVES:**

1. To explore basic aspects and mechanisms of reproductive physiology
2. To discuss comparative reproductive processes
3. To determine applications of reproductive biology

**BRIEF COURSE OUTLINE:**

1. Endocrinological control of reproductive function: hypothalamus and hypophysis, testes, ovary, placenta and adrenal cortex
2. Male reproduction: male reproductive tract, spermatogenesis, semen, accessory sex organs, ejaculation and libido
3. Female reproduction: female reproductive tract, folliculogenesis, oogenesis, estrual and menstrual cycles, fertilization, pregnancy, parturition and lactation

**STYLE/MODE OF TEACHING:** Lecture M W F

**EXAMS AND MAJOR ASSIGNMENTS:**

Three 50-minute exams @ 100 points	300
Final Exam	150
Research Project (topic selected by February 20; draft of poster due March 30; poster due April 17)	100
Oral presentation – paper of week	75
Discussion leader – paper of the week	25

**GRADING PROCEDURES:** Grading scale: 90% = A; 80% = B; 70% = C; 60% = D; and less than 60% = F

Attendance and participation in class is expected.

**TEXT:** Reproduction in Domestic Animals. Perry T. Cupps, (Ed.). Fourth ed. Academic Press, Inc., San Diego, 1991.

**OFFICE HOURS:** Stop anytime or call for an appointment.

**WEB SITE:** <http://www.ansi.okstate.edu/course/> , user name: 5113; password: Wettemann

**LECTURE TOPICS:**

Introduction: Reproductive physiology & endocrinology  
The hypothalamic-hypophyseal system: the nervous system and reproduction (Ch 1)\*  
Radioimmunoassays  
Gonadotropins and anterior pituitary hormones (Ch 2)  
Steroidogenesis and catabolism of steroid hormones (Ch 3)  
Testicular hormones

**EXAM 1 . . . . Monday, February 2, 2009 (100 points)**

Ovarian Hormones (Ch 3)  
Receptors and mechanism of hormone action  
Adrenal corticoids  
Prostaglandins  
Review of male anatomy and physiology (Ch 6)  
Spermatogenesis and spermatozoa (Ch 5)

**EXAM 2 . . . . Wednesday, February 25, 2009 (100 points)**

Male accessory glands  
Semen  
Erection, ejaculation, libido and male behavior  
Review of female anatomy and physiology (Ch 9)  
Folliculogenesis and oogenesis (Ch 4)  
Estrous and menstrual cycles and ovulation

**EXAM 3 . . . . Friday March 27, 2009 (100 points)**

Photoperiodic control of reproduction  
Capacitation, fertilization and early embryonic development (Ch 8)  
Artificial insemination (Ch 7)  
Regulation of the ovary, contraception and superovulation  
Conceptus development and maternal recognition of pregnancy (Ch 9)  
Placentation and placental hormones (Ch 10)

**FINAL EXAM . . . . Friday May 8, 2009, 8-9:50 a.m. (150 points)**

\*Reading assignments. Chapters 12 through 17 describe the reproductive biology of species and should be read to develop a comparative understanding of specific reproductive processes.

Robert P. Wettemann, 114C AnSci, x46077

## **PROJECT**

Each student will prepare a poster presentation to answer a specific question in reproductive physiology. A list of suggested topics will be given and the student must select a topic and present a preliminary outline and major references for approval by February 20, 2009. A draft of the poster (electronic or hard copy) is due on March 30, 2009. References must be written in the format required for the journal, Biology of Reproduction. The poster presentation (maximum 4 x 4 ft area) should include a title, abstract, introduction, summary and discussion of pertinent data, conclusions and references. Posters will be displayed during April 17 to May 8, 2009. A period will be scheduled when the author will be present at the poster to discuss the topic and answer questions for visitors.

## **ORAL PRESENTATION OF THE PAPER OF THE WEEK**

Each student will present an oral summary of a research paper on a topic related to current lecture material. The paper will be selected by the instructor and the reference will be given one week before the presentation. All students are expected to read the paper. The student will be allowed no more than 10 minutes to present the material. These presentations will be given on Wednesdays at the beginning of the class period. Each presentation will be followed by a class discussion of the topic. Each week a discussion leader will be selected to lead the discussion (5 to 10 min) about the paper of the week.