Animal Science 340
Reproductive Physiology of Domestic Animals
Course Syllabus - Fall 2008

Instructor: Cynthia A. Daley, Ph.D. Email: cdaley@csuchico.edu

Class Schedule: Mon. & Wed. 9:00 - 9:50 Lecture- Plumas 205
Mon. or Wed. 2:00 - 5:00 Laboratory (University Farm)
Meet at the livestock lab unless other arrangements have been made

Office Hours: M/W 10:00 – 1:00pm Plumas Hall 209 Ext. 6280
Or by appointment

Required Text: Pathways to Pregnancy and Parturition – 3rd Ed. P.L. Senger

Course Content:

The primary objective of this course is to promote an understanding of reproductive processes in domestic animals. The course will emphasize basic and comparative aspects of reproductive physiology to meet the needs of students in agricultural sciences, animal sciences, biology, pre-veterinary medicine, and related fields. Lecture material will provide a fundamental understanding of reproductive mechanisms, from the control of ovulation to the initiation of parturition.

The latest in reproductive technologies (i.e., artificial insemination, estrous synchronization, embryo transfer, embryo sexing, and cloning) will be discussed as they impact animal agriculture – pros and cons. Laboratory sessions will include “hands-on” exercises that emphasize theory received in lecture.

Course grading:

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<tr>
<th>Component</th>
<th>Points</th>
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<tr>
<td>Comprehensive final</td>
<td>150</td>
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<tr>
<td>Lab Reports</td>
<td>160</td>
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<tr>
<td>7 quizzes (50 pts each)</td>
<td>350</td>
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<tr>
<td>Topic presentation</td>
<td>100</td>
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<tr>
<td>Participation Points and Attendance</td>
<td>100</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>850</strong></td>
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Grade Scale: 90% = A; 80% = B; 70% = C; 60% = D; <60% = F
Ground Rules

Quizzes will be given at the beginning of each lab session (2:15) and will cover the previous two weeks’ lecture and laboratory information. Punctuality is important to insure that each student has the maximum amount of time to complete the quiz. Makeup-quizzes will be at the discretion of the Professor, and under most circumstances will not be granted.

As stated in the Executive Memorandum 04-36, Policy on Academic Integrity and the Establishment of the Council for Promoting Academic Integrity.

Academic integrity is defined as "a commitment, even in the face of adversity, to five fundamental values: honesty, trust, fairness, respect, and responsibility. From these values flow principles of behavior that enable academic communities to translate ideals to action."

Cheating is intentional fraud or deception for the purpose of improving a grade or obtaining course credit and includes all behavior intended to gain unearned academic advantage. Cheating includes either helping or attempting to help another person cheat.

Misuse of sources is defined as “carelessly or inadequately citing ideas and words borrowed from another source. [...] Ethical writers make every effort to acknowledge sources fully and appropriately in accordance with the contexts and genres of their writing. A student who attempts (even if clumsily) to identify and credit his or her source, but who misuses a specific citation format or incorrectly uses quotation marks or other forms of identifying material taken from other sources has not plagiarized. Instead, such a student [has] failed to cite and document sources appropriately.”

“Plagiarism occurs when a [student] deliberately uses someone else’s language, ideas, or other original (not common-knowledge) material without acknowledging its source.

If there is evidence that you have been involved in any form of academic dishonesty, you will receive an “F” grade for the course, and a report will be provided to Student Judicial Affairs for further action.

If a student feels an error in grading has been made, the student has one week from the time of the assignment is returned to them (or the grade is posted on the web, whichever is later) to request a review of the grade. The request must be in writing – attached to the original assignment—and must include a specific statement as to what is in error, how it should be corrected, and what supporting evidence is available.

Expected Student Behavior in the Classroom

- Students are expected to turn off all pagers, cell phones and other electronic devices during class time.
- Students are expected to pay attention and participate in class meetings.
- Students may not read other materials (newspapers, magazines) during class.
Students are to remain in class during the entire session with the exception of breaks. Students are not allowed to come and go during the class session.

All class participants are expected to exhibit respectful behavior to other students and the instructor.

All students have the right and privilege to learn in the class, free from harassment and disruption.

Inappropriate or disruptive behavior will not be tolerated, nor will lewd or foul language.

The class follows the standards set in the Code of Students Rights and Responsibilities (EM 96-38) and students are subject to disciplinary action for violation of that code.

Be respectful and considerate of other students

Be respectful and considerate of your instructors

Be respectful and considerate of the animals

Laboratory Reports: Due the following Monday 9:00 am in lecture. Each report must be typed, single spaced, 1 inch margins, 12 pt font, in 3rd person, fully edited, and follow this format precisely - with the appropriate headings.

1. Title, date, student name, class, lab report # 1 through 8
2. Objective/Purpose: discuss objectives and overall goal of the laboratory experience
3. Activities/Methods: discuss the activities completed to achieve the goals of the lab – describe the methods used to conduct the laboratory in detail. What equipment was used and how this equipment was useful toward completing the objectives of the laboratory.
4. Results: report any data collected in tabular form or graphically displayed. If no data was collected, list the learner outcomes.
5. Discussion:
   a. Discuss the data/results; b. What did you learn from this activity; c. What is the relevance to production agriculture.; d. Answer any questions posed in the lab exercise
6. Rate the activity 1 – 10 in terms of what you learned, is it appropriate for the course, did you learn from the activity, did the activity achieve the objectives.

Bonus Points: There are 4 opportunities to become more involved in the class for bonus credit. Each opportunity is worth 20 pts depending on the amount of time and degree of sophistication of the assignment. We are seeking interested volunteers to help with the setup and execution of specific labs.

Advanced Topic Presentations: Review articles on a number of reproductive subjects have been posted to Web CT for your review. The goal of this exercise is to introduce students to advanced topics in the field of reproductive physiology and offer an opportunity for independent study. Students will work in groups of two or three to present these topics in an oral presentation format. Students will be scored on content; development of topic; sited references; ability to apply the concept to production agriculture (discuss relevance or lack there of); professionalism of the presentation; ability to work together; ability to answer questions; student survey assessment.
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<tr>
<th>Date</th>
<th>Lecture</th>
<th>Lab</th>
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| 8/25-8/27    | **Chapter 1: History**  
**Chapter 2: Female Anatomy/Physiology**                                  | • Preliminary Assessment  
• Reproductive Management Planning  
• Economics of Reproductive selection  
• Developing advanced reproductive topic presentations |
| 9/1 - Mon    | Labor Day – No Class                                                    | • No Lab                                                            |
| 9/3 - Wed    | **Chapter 2: Female Anatomy/Physiology**                                | • Ultrasound Technology as a management tool  
• Pregnancy Diagnosis - Ultrasound in the ewe |
| 9/8 – 9/10   | **Chapter 3: Male Anatomy/Physiology**                                   | • Quiz 1  
• Ultrasound Technology in Beef Cattle  
• Sexing fetuses with Ultrasound Technology  
• Lab report #1 due Monday 9/15 |
| 9/15 - 9/17  | **Chapter 4: Embryogenesis of the male and female tract**               | • Male Reproductive Tracts  
• Breeding Soundness Exams in Bulls  
• Lab Report #2 due Monday 9/22 |
| 9/22-9/24    | **Chapter 5: Endocrinology**                                            | • Quiz 2  
• Estrous Synchronization in Sheep  
• Laparoscopic A.I. in Sheep – demo  
• Reproductive Management of Flocks  
• Lab report #3 due Monday 9/29 |
| 9/29-10/1    | **Chapter 5: Endocrinology**                                            | • Estrus Synchronization in domesticated species  
• Case studies |
| 10/6-10/8    | **Chapter 6: Onset of Puberty**                                         | • Quiz 3  
• Semen Analysis  
Morphology/Motility/Concentration/Advanced Technologies  
• Lab Report #4 due Monday 10/13 |
| 10/13-10/15  | **Chapter 7: Reproductive Cycles**                                       | • Swine A.I.  
• Swine Estrous Synchronization  
• Heat Detection  
• Reproductive Management in the Swine Industry  
• Lab Report #5 due Monday 10/20 |
| 10/20-10/22  | **Chapter 8: Follicular Phase of the Estrous Cycle**                     | • Quiz 4  
• Introduction to Artificial Insemination  
• Palpation Laboratory: I  
• Female Reproductive Tracts – table top AI |
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<th>Dates</th>
<th>Chapter</th>
<th>Topics</th>
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| 10/27-10/29 | **Chapter 9**: Luteal Phase | • Palpation Laboratory: II  
• Thawing straws/loading A.I. guns |
| 11/3 – 11/5 | **Chapter 10**: Endocrinology of the Male and Spermatogenesis | • Quiz 5  
• Palpation Laboratory III:  
• Estrus Synchronization to facilitate A.I. |
| 11/10-11/12 | **Chapter 11**: Reproductive Behavior | • Certification Practicum I  
• Lab report # 6 due Monday 11/17 |
| 11/17-11/19 | **Chapter 12**: Spermatozoa in the Female Tract: Transport, Capacitation and Fertilization | • Quiz 6  
• Developing Primary Cell Lines for Cloning  
• Animal Cloning: Zona-free Cloning method: Hand-Made Cloning  
• Lab report #7 due Monday 12/1 |
| 11/24-11/26 | Thanksgiving Break | No Labs |
| 12/1-12/3 | **Chapter 13**: Early Embryogenesis and Maternal Recognition of Pregnancy | • Embryo Transfer in Bovine - demo  
• Freezing Embryos (Lab Report #9)  
• Assessing embryo quality: IETS standards  
• Lab Report #8 due Monday 12/8 |
| 12/8-12/10 | **Chapter 14**: Placentation, and the Endocrinology of Gestation and Parturition | • Quiz 7  
• Topic Presentations  
• Follow up Assessment |
| Week of 15th | **Final: Comprehensive Exam** | No Laboratory during Finals |
Artificial Insemination Certification
Program for CSU, Chico Students

Program: As a component of the Reproductive Physiology Course at CSU, Chico, the College of Agriculture, together with the Agriculture Teaching and Research Center (ATRC) have agreed to provide training and certification in artificial insemination.

Cows are provided for a three week period, at which time, students have unlimited access as long as they exercise common sense in their handling of the animals. Training will take place during lab each Monday or Wednesday in October. Students learn every aspect of the A.I. technique as well as trouble-shooting strategies and estrous synchronization.

Costs: The University will obtain and maintain the cattle, provide the facilities and supply all the necessary information and equipment at a cost of $100/student.

If you plan to participate in this program, please fill out the following information and return the form to the farm office with your check for $100, payable to the CSU Chico University Farm.

Please print.

Forms/checks will need to be submitted by September 30, 2008.

Name: ______________________________

Address: ______________________________

Phone: ______________________________

Email address: ______________________________

Payment amount and Check number: ______________________________

Signature: ______________________________