*Reedley College Animal Science Program*

Course Syllabus - Spring 2023

**Course Number & Name:** AS 22 - Equine Reproduction **Section Number:** 50109

**Instructor Information:**

Kameron Suggs

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Phone: 559-331-1515

Office hours: By arrangement

**Class Meets:**

Lecture: Tuesday & Thursday

3:00 - 3:50 p.m.

Lab: Tuesday & Thursday

4:00 - 5:30 p.m. Pavilion

**Holidays:** Holidays will be observed as per the State Center Community College District Schedule.

January 16th Martin Luther King, Jr. Day (Observed)

February 17th Lincoln Day (Observed)

February 20th Washington Day (Observed)

Spring Break- April 3th- April 6th

**Drop Deadline:**

January 20th last day to drop with full refund; January 27th last day to drop a class on WebAdvisor to avoid a W; January 27th last day to add class; **March 10th** last day to drop the class with W, after that grade must be given.

**Final Exam Date:**

Monday, May 15, 3:00-4:50 pm

**Prerequisites:** None

**Units:**  3 (based on 2 hours lecture per week and 3 lab hours)

**Text & Other Course Materials:**

1. **Recommended** Brinsko, S.P., Blanchard, T.L., Varner, D.D., Schumacher, J., Love, C.C., Hinrichs, K., Hartman, D. . *Manual of Equine Reproduction,* 2nd rd. Maryland Heights, Missouri: Masby, ISBN-13: 978-0323017138

**Method for Measuring Student Advancement and Determining Grades**

**Grading Scale:** A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = under 60%.

**Attendance Requirements:**

Attendance is required.

* Students are responsible for obtaining notes/information missed due to an absence from the instructor.
* Please notify the instructor if you know in advance that you will be absent from class.
* College policy dictates that an instructor should drop a student with two consecutive weeks of unexcused absences.
* At the end of the 9th week of instruction, no withdrawals are permitted and the student must receive a grade.
* Make up tests and assignments will only be allowed for emergency situations and pre-excused absences.

**Behavioral Standards:**

All students are expected to act in a mature, responsible manner that respects the rights of all other students, the instructor, and any guest presenters that may participate in the class. All cell phones and other electronic devices that may cause distraction are to be turned “off” or kept on “silent” during lecture.

**Cheating & Plagiarism:**

In keeping with the philosophy that students are entitled to the best education available, and in compliance with Board Policy 5410, each student is expected to exert an entirely honest effort toward attaining an education. Violations of this policy will result in disqualification for the course.

**Accommodation Statement:**

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

**Course Description:**

This course is a survey of the equine industry, encompassing the evolution and role of the equine species throughout history, breed selection and development, nutrition, diseases, preventative health, reproductive management, basic horse care, and stabling alternatives.

**Student Learning Outcomes:**

*Upon completion of this course, students will be able to:*

1. Identify and explain the physiological function of the anatomical features of the male and female equine reproductive systems.
2. Outline the techniques utilized for both natural breeding and artificial insemination of horses.
3. Describe safe horse handling procedures and management of mares from conception through weaning of the foal.

**Course Learning Objectives:**

*In the process of completing this course, students will:*

1. Relate basic genetic principles to techniques in breeding selection and mating programs.
2. Evaluate advantages and disadvantages of common mating systems.
3. Compile the possible genetic and phenotypic ratios for two traits.
4. Analyze the impact, advantages and disadvantages of artificial insemination versus natural breeding techniques.
5. Describe the origin and functions of the major hormones, both male and female, and explain the role of each in reproduction.
6. Describe the correct fetal position, delivery process, approximate timeline and maternal behaviors for normal parturition.
7. Distinguish the signs of gestation and the stages of parturition.
8. Determine motility concentration and volume of semen in a given specimen.
9. Critique various methods of semen handling and storage.
10. List and explain the correct use of specialized insemination tools.
11. Summarize latest developments in reproductive technology.
12. Examine and interpret latest regulations by breed associations regarding registration of foals.

**Lecture Content:**

1. Basic Genetic Principles
   1. Genes
   2. Genotype and phenotype
   3. Heritability
   4. Application to breeding and mating
2. Mating Concepts
   1. Purebred systems
      1. Inbreeding
      2. Linebreeding
      3. Outcrossing
   2. Heterosis
   3. Crossbreeding systems
3. Natural vs. Artificial Breeding
   1. Percent conception
   2. Potential injury to mare and stallion
   3. Number of mares covered
4. Male Reproductive Anatomy and Physiology
   1. Male reproductive tract
   2. Male hormones
   3. Behavioral aspects
   4. Semen evaluation
      1. Concentration, volume, and motility of viable sperm
      2. Correct morphology
      3. Techniques for optimizing viable sperm
         1. Extending
         2. Centrifuging
5. Female Reproductive Anatomy and Physiology
   1. Female reproductive tract
   2. Female hormones
   3. Estrous cycles and ovulation
   4. Estrus expression
6. Gestation and Parturition
   1. Conception and implantation
   2. Fetal development
   3. Pregnancy detection/ fetal examination
      1. Ultrasound
      2. Palpation
   4. Parturition
7. Artificial Insemination
   1. Advantages and limitations
   2. Equipment and facilities
   3. Semen storage and quality
      1. Handling fresh raw semen
      2. Handling cooled or frozen semen
      3. Cooled semen containers and frozen semen containers
      4. Thawing techniques
      5. Methods of transporting
   4. Techniques utilized
      1. Specialized insemination tools
      2. Methods of hormonal manipulation of estrous
   5. Breed requirements and regulations
8. Reproductive Technologies
   1. Embryo manipulation
      1. Embryo transfer
      2. Embryo evaluation
   2. Latest developments

**Lab Content:**

1. Basic Horse Husbandry
   1. General Horse Handling
   2. Safety Procedures
   3. Immunizations & Health Maintenance
   4. Nutrition and Feeding
2. Managing the Mare for Reproduction
   1. Pre-Breeding Management
   2. Gestation
   3. Parturition
   4. Post-Foaling
   5. Re-Breeding
3. Foal Management
   1. Foaling Procedure
   2. Identifying and Solving Problems
   3. Foal Development
   4. Halter Training
4. Managing the Stallion for Reproduction
   1. Care and maintenance of the stallion
   2. Semen Collection and Evaluation
   3. Semen Storage, Handling, and Shipping
   4. Evaluation and Marketing
5. Mating Systems
   1. Natural Mating
   2. Artificial Insemination
6. Ultrasonography
   1. Pre-breeding
   2. Post-breeding
7. Documentation
   1. General Record Keeping
   2. Registration Requirements
      1. Breeding Contracts