EQSCI 53 Course Outline as of Spring 2005

CATALOG INFORMATION

Dept and Nbr: EQSCI 53 Title: EQUINE REPRODUCTION
Full Title: Equine Reproduction
Last Reviewed: 8/28/2017

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.00	Lecture Scheduled	3.00	6	Lecture Scheduled	18.00
Minimum	1.00	Lab Scheduled	0	6	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	18.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 36.00 Total Student Learning Hours: 54.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	AG 114

Catalog Description:
This course combines the study of basic genetic principles with the study of the anatomical and physiological aspects of reproduction as they relate to equine reproduction. Genetic principles to be emphasized include basic inheritance, selection techniques, mating systems, heterosis, and performance evaluation. Reproductive aspects to include endocrinology, estrous cycles, mating behaviors, gametogenesis, conception, gestation, parturition, and maternal behaviors. Artificial insemination, embryo manipulation, and current innovations in productive biotechnology will also be examined.

Prerequisites/Corequisites:

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: The study of basic genetic principles combined with the study of the anatomical and physiological aspects of equine reproduction and performance evaluation. (Grade or P/NP)

Prerequisites/Corequisites:
Recommended:
Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Spring 2005	Inactive:	Fall 2024
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
The student will:
1. Examine concepts of gene frequency, alleles, homozygosity, heterozygosity, dominance, co-dominance, and recessive genes.
2. Compare and contrast artificial and natural mating and selection systems.
3. Compile the possible genetic and phenotype ratios for two traits, resulting from the mating of two heterozygous individuals, by using the Punnet Square method.
4. Describe the effect of heritability on selection progress for individual traits.
5. Interpret EPD's, ratios, breeding values, and indexes for use in sire selection.
6. Critique the mating concepts of inbreeding, linebreeding, outcrossing, and crossbreeding.
7. Describe the physiological functions of the major anatomical points of the male and female reproductive tracts.
8. List the origin and function of the major hormones, both male and female, involved in reproduction.
9. Describe the physical and behavioral expressions of estrus.
10. Appraise the anatomical and physiological aspects of conception, implantation, and gestation.
11. Critique various methods of pregnancy detection.
12. Describe the correct fetal position, delivery process, approximate timeline and maternal behaviors for a normal parturition.
13. Identify factors that may contribute to dystocia.
14. Explain the advantages and limitations of artificial insemination.

15. Analyze the significance and benefits of innovations in reproductive biotechnology, such as cloning and the splitting, sexing, storing and transfer of embryos.

Topics and Scope:

1. Unit One: Basic Genetic Principles
   a. Genes
   b. Genotype and phenotype
   c. Heritability
2. Unit Two: Mating Concepts
   a. Purebred systems, inbreeding, linebreeding and outcrossing
   b. Heterosis
c. Crossbreeding systems; two-breed, rotational, terminal, rotaterminal
3. Unit Three: Selection Methods
   a. Artificial and natural selection
   b. Production and performance records
   c. Expected progeny difference
4. Unit Four: Male Reproductive Anatomy and Physiology
   a. Male reproductive tract
   b. Male hormones
   c. Behavioral aspects
   d. Semen evaluation
5. Unit Five: Female Reproductive Anatomy and Physiology
   a. Female reproductive tract
   b. Female hormones
   c. Estrous cycles and ovulation
   d. Estrus expression
6. Unit Six: Gestation and Parturition
   a. Conception and implantation
   b. Fetal development
   c. Pregnancy detection/fetal examination
   d. Parturition
7. Unit Seven: Artificial Insemination
   a. Advantages and limitations
   b. Equipment and facilities
   c. Semen storage and quality
   d. Techniques utilized
8. Unit Eight: Reproductive Biotechnology
   a. Embryo manipulation
   b. Cloning
   c. New innovations

Assignment:

Assignments may include specific reading assignments from instructor prepared materials. Students will be asked to set up artificial insemination equipment.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written homework, Reading reports	Writing 10 - 20%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Quizzes, Exams	Problem solving 10 - 30%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None	Skill Demonstrations 0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Completion	Exams 60 - 80%

Other: Includes any assessment tools that do not logically fit into the above categories.

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Instructor prepared materials will be provided for student use.