EQSCI 154 Course Outline as of Fall 2014

CATALOG INFORMATION

Dept and Nbr: EQSCI 154 Title: EQUINE COLOR GENETICS
Full Title: Introduction to Equine Color Genetics
Last Reviewed: 5/12/2008

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	1.50	Lecture Scheduled	1.50	17.5	Lecture Scheduled	26.25
Minimum	1.50	Lab Scheduled	0	8	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	1.50		Contact Total	26.25
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 52.50 Total Student Learning Hours: 78.75

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:	

Catalog Description:
This course provides an introduction to information and tools needed to make statistical predictions of the coat color of foals based on genetic makeup of the sire and dam. Students are instructed in the use of the Punnet Square to predict gene combinations.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Schedule of Classes Information:
Description: This course provides an introduction to information and tools needed to make statistical predictions of the coat color of foals based on genetic makeup of the sire and dam. Students are instructed in the use of the Punnet Square to predict gene combinations. (Grade or P/NP)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:
Transfer Credit:
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:	Effective:	Inactive:
UC Transfer:	Effective:	Inactive:

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course, students will be able to:
1. Explain the basic principles of genetics as they relate to equine coat color
2. Differentiate between breed and color
3. Recognize and identify coat color variations
4. Use the Punnet Square to predict gene combinations for a variety of coat colors
5. Apply knowledge of gene combinations to horse breeding considerations

Topics and Scope:

I. Introduction to Genetics
   A. Basic principles of genetics
   B. How genes function
   C. Basic principles of color in mammals
   D. Using the Punnet Square to predict gene combinations
II. Horse Coat Colors
   A. Breed vs. color
   B. Base color, color dilution, color modifiers
   C. Most common coat colors and their genetic formulas
III. Base Colors
   A. Black
   B. Sorrel/Chestnuts
IV. Color Dilution
   A. Palominos and Cremellos
   B. Buckskins and Perlinos
   C. Duns
   D. Champagnes
V. Color Modifications
   A. Bay

B. White patterns (and Lethal White)
C. Roan
D. Gray
E. White

VI. Paints
A. Paints vs. Pinto
B. Tobiano
C. Overo (and Lethal Overo)
D. Tobero

VII. Appaloosa

VIII. Role of Horse Color in Horse Breeding

Assignment:

1. Reading, approximately 20-30 pages per week.
2. Problem solving exercises such as:
   a. Use Punnet Square to predict gene combinations for coat color.
   b. Match genetic formulas to common coat colors.
   c. Given four basic coat colors, predict combination outcomes.
3. Quizzes (1-3); final exam.

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.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.	Writing 0 - 0%

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

Problem solving exercises.	Problem solving 20 - 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, Matching items, Completion, Short answer.	Exams 50 - 60%

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

Attendance and participation.	Other Category 10 - 20%

Representative Textbooks and Materials:
D. Phillip Sponenberg, Equine Color Genetics. Iowa State Press, 2005.
Jeanette Gower, Horse Color Explained. Trafalgar Square Publishing, 2000 (classic text).