# Department of Animal Science

## Spring 2015

## ANSC 2311 Equine Exercise Physiology

COURSE NUMBER/TITLE: ANSC 2311 Equine Exercise Physiology

INSTRUCTOR: Dr. Byron C. Housewright, ph. 432-837-8413
e-mail: bhousewright@sulross.edu
Office: RAS 107
Office Hours: MW 1:30 – 4, TR 9 - 11
Online Course: Blackboard 9
Website: http://sulross.blackboard.com

TEXT: No Required Text

COURSE OBJECTIVES: In-depth study focusing on the physiological changes that occur in the respiratory, cardiovascular and musculo-skeletal system in the exercising horse. Special emphasis will be placed on conditioning the performance horse. Anatomical study with focus placed on the biomechanics of the skeletal system and integration to movement and structural correctness. Understanding of the primary anatomical structures making up various organ systems

1) Discuss the skeletal and muscular anatomy of the front and hind limbs
2) Knowledge of how anatomy effects the movement biomechanics in the equine
3) Working knowledge of biochemical pathway alterations with conditioning and changing feeds
4) Basic understanding of biochemical pathways as related to energy transfer

**DEPARTMENTAL PROJECTED LEARNING OUTCOMES:**

Student will demonstrate that he/she is able to:

1. Recognize and be able to utilize animal breeds from a variety of domestic species
2. Comprehend the role of nutrition in the production of food animals
3. Understand the processes involved in producing meat products from a variety of domestic food animals
4. Select breeding animals using genetic information

**GRADING POLICY:**

| | |
|---|---|
| Quizzes 5 quizzes @ 100 pts ea: | 500 points total |
| Training/Exercise Project: | 200 points total |
| Case Studies 4 @ 50 pts ea: | 200 points total |
| Supplement Reviews 2 @ 50 pts ea: | 100 points total |

A= 1000 – 900
B= 899 – 800
C= 799 – 700
D= 699 – 600
F= 599 and below

Assignments can be turned in late but please note that there will be a 10% per day penalty for any assignment turned in late.

1) **Quizzes** – Quizzes will be 40 multiple choice questions worth 2.5 pts ea for a total of 100 points for each quiz. Quizzes will be given online via blackboard. Students will be given 3 days to complete each quiz and can complete the quiz twice with the highest score being recorded.
2) **Training/Exercise Project –** This assignment will require you to design an exercise regimen for a specific equine use. Uses may be but are not limited to, rodeo, show, cutting, grand prix jumping or endurance. The plan should include a 1 – 1.5 page introduction that will describe the horses and unique requirements of their specific training. Following, there should be a section that details the training protocol including reasoning for the exercise times and rigor. The final section should be devoted to projected outcomes.
3) **Case Studies** – A total of 4 case studies will be provided throughout the semester which will identify a problem either in structure or metabolism. In this assignment I expect you to have to go look for outside references and cite as necessary within the body of your paper.
4) **Supplement Review** – There will be 2 assignments during the semester where students will review and discuss a product available for equine supplementation. These supplements should be relative to conditioning, oxygen exchange, endurance or muscle development.

**Reasonable accommodations for students with disabilities:**

If you have a disability that may require assistance or accommodation or if you have questions related to any accommodations for testing, not takers, readers, etc, please speak with me as soon as possible.

**Tentative Schedule of Weekly Topics:** These are subject to alteration if time warrants.

| Week of: | Topic covered |
|---|---|
| Jan. 19 | Introduction and Directional Terms |
| Jan. 26 | Hoof Anatomy |
| Feb. 2 | Leg Anatomy and Balance |
| Feb. 9 | Energetics of Exercise |
| Feb. 16 | Energetics/Muscles |
| Feb. 23 | Muscles |
| March 2 | Connective Tissue |
| March 9 | Respiratory System |
| March 16 | Spring Break |
| March 23 | Cardiovascular System |
| March 30 | Muscular Responses |
| April 6 | Skeletal Responses |
| April 13 | Respiratory & Cardiovascular Responses |
| April 20 | Thermoregulation |
| April 27 | Training Principles |
| May 4 | Exercise Testing |