I. **TITLE:**

Animal Anatomy and Physiology

II. **CATALOG DESCRIPTION:**

Deals with the anatomy of body systems, how these systems interrelate, and the physiology of body organs. Species covered include porcine, bovine, equine, canine, and feline. Three 1-hour lectures per week.

Prerequisite: AGR 310

*To receive graduate credit for this course, a student must be admitted to graduate studies prior to registering for the course.*

III. **PURPOSE:**

The purpose of the course is to familiarize students with the organs involved in the circulatory, respiratory, digestive, urinary, nervous, and musculoskeletal systems of animals.

IV. **COURSE OBJECTIVES:**

To discuss and cover the following species:

A. Equine
B. Bovine
C. Porcine
D. Canine
E. Feline

To teach students how these body parts work independently of one another, as well as, how they work together to sustain life.

To help students develop a better overall knowledge of how the animal body works and how such things as nutrition, environment, and management affect the general function of these body systems.
To provide knowledge on how one can maximize the functional capacity of the animal body in regard to increasing the production of the animal.

V. CONTENT OUTLINE:

A. Cell anatomy and physiology
B. Skeletal system
   1. Support
   2. Anatomy – skull, long and short bones
C. Nervous system
D. Muscular system
   1. Skeletal muscle
   2. Smooth muscle
   3. Cardiac muscle
E. Circulatory system
   1. Anatomy
      a. Heart
      b. Arteries
      c. Veins
   2. Physiology
      a. Circulation
      b. Shock
F. Digestive system
   1. Anatomy
      a. Ruminant vs. Monogastric
   2. Physiology
      a. Rumination
      b. Digestion
      c. Absorption
G. Urinary system
   1. Anatomy
   2. Physiology
H. Respiratory system
   1. Anatomy
   2. Physiology of respiration
      a. Inhalation
      b. Expiration
I. Mammary gland
   1. Anatomy
   2. Physiology
      a. As related to milk production
J. Dysfunctions
   1. Infertility
   2. Lameness
   3. Indigestion
   4. Malabsorption
5. Kidney and liver failure
6. Miscellaneous diseases

VI. **INSTRUCTIONAL ACTIVITIES:**

A. Lectures
B. Videos
C. Demonstrations
D. Problem solving
E. Class projects
F. Class discussions
G. Reading Assignments:

Chapter 1
Chapter 2
Chapters 4, 5
Chapter 6
Chapters 7, 8
Chapter 9
Chapter 10
Chapter 12
Chapter 13
Chapter 15
Chapter 16
Chapter 17
Chapter 18
Chapter 19
Chapter 23

VII. **FIELD AND CLINICAL EXPERIENCES:**

Field and clinical material experienced by the instructor will be implemented into the course where it is applicable.

VIII. **RESOURCES:**

None

IX. **GRADING PROCEDURES:**

There will be three 1-hour examinations given, each worth 100 points. These examinations will be scheduled one week in advance, so there should be no reason for missing the examinations. If an exam is missed, an all essay examination will be given the week of finals as determined by the instructor.
Each examination is comprehensive!

The final exam will be given as scheduled in the schedule booklet.

Due to the amount and content of material, daily pop quizzes may be given to make the students remain current in their studies. There will be no chance to make these quizzes up.

Grades will be based upon the cumulative scores from the quizzes, three 1-hour examinations, and lecture final.

A = 90%
B = 80%
C = 70%
D = 60%
E = < 60%

Graduate students taking this course for credit are required to write a comprehensive term paper. Topic will be assigned by the instructor. Instructor and student will discuss this on an individual basis.

X. ATTENDANCE POLICY: MANDATORY

Please refer to the most current copy of the Murray State University’s Undergraduate Bulletin and Graduate Bulletin.

XI. ACADEMIC HONESTY POLICY:

Please refer to the most current copy of the Murray State University’s Undergraduate Bulletin and Graduate Bulletin.

NOTE: The School of Agriculture Faculty have adopted and implemented an Academic Honesty Policy in addition to the University Honesty Policy, which can be found in the current Undergraduate Bulletin and Graduate Bulletin. The policy sets guidelines regarding acts of dishonesty and the procedure to follow should an event occur. It is each Agriculture student’s responsibility to obtain and read a copy of this document. The School’s Academic Honesty Policy can be obtained by asking for a copy from any Agriculture Faculty member or the Secretary.

XII. TEXT AND REFERENCES:

*Anatomy and Physiology of Farm Animals, 6th edition,* Frandson
XIII. PREREQUISITES:

AGR 310

XIV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact Sabrina Y. Dial, Director of Equal Opportunity, Murray State University, 103 Wells Hall, Murray, KY 42071-3318. Telephone: 270-809-3155 (voice), 270-809-3361 (TDD).

XV. MSU SCHOOL OF AGRICULTURE CELL PHONE POLICY

The School of Agriculture recognizes that in today’s world cell phones are a familiar and often necessary form of communication for students.

It shall be the policy of the School that no cell phone usage shall be allowed in class and/or labs without the prior consent of the course instructor. This shall include verbal calling, incoming calls, email, text messaging, and use of cell phone calculators on tests and quizzes.

Cell phones must be kept off and out of sight (i.e. secured to a person’s belt or kept in a bag or purse away from desks and lab counters).

Should a student’s cell phone be visible, ring, or other form of unauthorized usage that is interruptive to the class or lab, the student may be asked to leave class and not return for that class/lab period.

Upon prior consent of the instructor, a student may obtain permission to have their phone on in case of an emergency or in critical family situations.

This policy also includes pagers and other electronic equipment such as blackberries and/or computers/laptops.