SCHOOL OF AGRICULTURE

COURSE NUMBER: AGR 503
CREDIT HOURS: 3

I. TITLE:

Animal Breeding

II. CATALOG DESCRIPTION:

Study of hereditary traits in livestock, breeding designs, progeny testing, and herd analysis.

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

III. PURPOSE:

To provide students with the fundamental concepts of animal genetics and how to apply these principles to animal breeding.

IV. COURSE OBJECTIVES:

To build an understanding of selection and mating systems based upon discussions of gene function, chromosomes, and chromosome abnormalities, phenotypic expression of genes, gene frequencies and genetics of populations for the ultimate goal of improving farm animals.

V. CONTENT OUTLINE:

A. Overview of the livestock industry
B. Cells, chromosomes, and gametes
C. Genes – their function and role in animal genetics
D. Gene mutations and lethal genes
E. Phenotypic expression of genes
F. Concept of gene frequencies
G. Variation in economic traits in farm animals
H. Principles of selection
I. Principles of inbreeding
J. Linebreeding
K. Outcrossing and crossbreeding
L. Genetic resistance to disease and parasites
M. Systems of breeding and selection in farm livestock
VI. **INSTRUCTIONAL ACTIVITIES:**

A. Lecture  
B. Problems  
C. Pedigree analysis  
D. Oral reports on current topics

VII. **FIELD AND CLINICAL EXPERIENCES:**

None

VIII. **RESOURCES:**

A. Textbook  
B. Handouts

IX. **GRADING PROCEDURES:**

A. Approximately four exams will be given, each of equal value. The final exam will be comprehensive

B. Letter grades  
   90 – 100 = A  
   80 – 89  = B  
   70 – 79  = C  
   60 – 69  = D  
   Below 60  = E

C. Those students taking this course for graduate credit will be required to write a research paper related to a specific topic in animal breeding.

D. Make up exams may be permitted with a reasonable excuse for the absence.

X. **ATTENDANCE POLICY:**

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:

*Genetics of Livestock Improvement*, 4th edition, Lasley

XIII. PREREQUISITES:

None

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 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.