I. TITLE:
Advanced Ration Formulation

II. CATALOG DESCRIPTION:
An advanced study in formulating balanced diets to meet the requirements for lactation, growth and reproduction in livestock. Practice in formulating least – cost rations and designing feeding programs. Prerequisite: AGR 300. (Spring)

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

III. PURPOSE:
Provide students training in calculating diets for various species of farm animals.

IV. COURSE OBJECTIVES:
To acquaint the student with techniques used to formulate balanced diets for livestock based on daily requirements, percent ration composition, and least-cost analysis.

V. CONTENT OUTLINE:
A. Evaluating feedstuffs
B. Characteristics of feedstuffs
C. Procedures in ration formulation
   1. Horses
   2. Beef and Sheep
   3. Dairy
   4. Swine
D. Least-cost rations using computer formulation techniques

VI. INSTRUCTIONAL ACTIVITIES:
A. Lecture
B. Homework
C. Computer ration formulation

VII. FIELD AND CLINICAL EXPERIENCES:
   A. Field trips to area feed mills and producers
   B. University farm laboratories

VIII. RESOURCES:
   A. Computers
   B. Calculators
   C. Nutritional textbooks
   D. Nutritional publications

IX. GRADING PROCEDURES:
   A. Points:
      Homework 100
      3 hour exams 300
      Final exam 100
      Total 500
   B. Make-up exams will 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:

   (Adopted by the MSU Board of Regents)
   Cheating, plagiarism (submitting another person’s material as one’s own), or doing work for another person which will receive academic credit are all impermissible. This includes the use of unauthorized books, notebooks, or other sources in order to secure or give help during an examination, the unauthorized copying of examinations, assignments, reports, term papers, or the presentation on unacknowledged material as if it were the student’s own work. Disciplinary action may be taken beyond the academic discipline administered by the faculty member who teaches the course in which the cheating took place.

   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:**

A. *Livestock Feeds and Feeding*, Church
B. *Feeds and Feeding*, Cullison
C. *Animal Feeding and Nutrition*, Jurgens
D. *N.R.C. Nutrient Requirements of Domestic Animals*

XIII. **PREREQUISITES:**

AGR 300

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.