

MURRAY STATE UNIVERSITY
COURSE SYLLABUS OUTLINE

DEPARTMENT: AGRICULTURE

COURSE NUMBER: AGR 620

CREDIT HOURS: 3

I. TITLE:

Experimental Design and Analysis

II. CATALOG DESCRIPTION:

An introduction to planning and designing experiments, stating objectives describing the experiment, outlining the statistical analysis and interpreting quantitative result. Topics include: random sampling, normal distribution, Student's "t" test, analysis of variance, and mean separation. (Fall).

III. PURPOSE:

The purpose of this course is to teach students how to organize and conduct research.

IV. COURSE OBJECTIVES:

Experienced Teacher Standards 2,6,7,8,9,10
Provide the student with a general understanding of the logic and reasoning involved in designing and conducting experiments. Special emphasis will be placed on planning an experiment, stating the objective, describing the experiment, conducting the statistical analysis and interpreting the results.

V. CONTENT OUTLINE:

- A. Designing and implementing experiments.
- B. Statistic mathematical notations.
- C. Calculating descriptive statistics.
- D. Calculating Student's "t" test.
- E. Interpreting experimental data.
- F. Analysis of Variance.
- G. Mean separation techniques.
- H. Factorial experiments, designs, and analysis.
- I. Split-plot design.

VI. INSTRUCTIONAL ACTIVITIES:

Lecture, demonstration, homework, and class practice using a calculator and micro-computer.

VII. FIELD AND CLINICAL EXPERIENCES:

Will provide experimental data collected from area research to give students statistical training.

VIII. RESOURCES:

Text: Experimental Design and Analysis

Calculator: A Texas Instrument TI60 will be recommended for this course

Computer: Demonstrate computer statistical software using CIT Computer Lab.

IX. GRADING PROCEDURES:

A. Final grade will be based on the following:
Homework - 25% and three hour exams - 25% each.

B. Letter grades: A = 90-100

B = 80-89

C = 70-79

D = 60-69

E = below 60

C. Make-up exams will be permitted with reasonable excuse for absence.

X. ATTENDANCE POLICY:

This course adheres to the policy published in the MSU Graduate Bulletin.

XI. ACADEMIC HONESTY POLICY:

Cheating, plagiarism (submitting another person's materials as one's own), or doing work for another person who 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, or term papers, or the presentation of unacknowledged materials 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.

XII. TEXT AND REFERENCES:

Kvanhli as shown in class.

XIII. PREREQUISITES:

None