I. TITLE:
Soil and Plant Analysis

II. CATALOG DESCRIPTION:
A study of the chemical and analytical procedures used on soils and plants along with instruction and theory of the use of common analytical equipment.

Prerequisite: AGR 250

*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 this course is to enable a student to develop an understanding of soil and plant analysis procedures and to use the results of these analyses to evaluate soil fertility.

IV. COURSE OBJECTIVES:
To develop a basic understanding of soil and plant analysis.

V. CONTENT OUTLINE:
A. Quick tests for nutrients in the field
B. Cleaning equipment, weighing, and measuring accurately
C. Standardization of an unknown acid
D. Preparation of standard solutions
E. Plant analysis
   1. Ashing procedures
   2. Analysis for Ca++, Mg++, Na+, and K+
   3. Analysis for phosphorus
   4. Analysis for nitrogen
F. Chemical analysis for soils for
   1. Cation Exchange Capacity
   2. Exchangeable Ca++, Mg++, Na+, and K+
   3. Exchangeable H+
G. Mechanical analysis of soil by pipette and sieve method
H. Analysis of water for NO using a specific ion electrode

VI. **INSTRUCTIONAL ACTIVITIES:**

A. Lecture
B. Lab activities

VII. **FIELD AND CLINICAL EXPERIENCES:**

A. Collecting soil and plant analysis samples.
B. Quick test for nutrients in the field.

VIII. **RESOURCES:**

A. Classroom
B. Lab
C. Textbook
D. Slide Projector

IX. **GRADING PROCEDURES:**

A student earns half of his/her grade by preparing a lab book of work completed in the lab. The remaining points are earned by two or three exams. In general, the grades in this course are assigned as follows:

Grading scale:
90 – 100 = A
80 – 89 = B
70 – 79 = C
60 – 69 = D
Below 60 = E

I may use my professional judgment to lower these percentages based on the performance of the high individuals in the class. NO extra work may be done to raise an individual’s grade.

Exam and Assignment Make-up Procedures – Students should tell me when they have to be away from class so that we can plan make-up work. I try to maintain a reasonable make-up policy for emergency situations by allowing the student to make-up the work.

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:


XIII. PREREQUISITES:

AGR 250

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.