I. TITLE:

Soil Science

II. COURSE DESCRIPTION:

A general study of soil properties including classification development, use of fertilizers, and conservation.

III. PURPOSE:

The purpose of the course is to study the physical and chemical properties of the soil, soil classification, fertilizers, and soil erosion.

IV. COURSE OBJECTIVES:

The objectives of the course are to develop a basic understanding of soils and soil properties as they relate to agricultural production.

V. CONTENT OUTLINE:

A. The Physical Properties of the Soil
   1. Soil texture
   2. Soil structure
   3. Bulk density
   4. Particle density
   5. Soil color
B. Soil Water
   1. Forces holding water in soils
   2. Calculating available H2O
C. Chemical Properties
   1. Clays
   2. Minerals
   3. Cation exchange capacity
   4. Ion exchange
   5. Exchangeable nutrients
   6. Acidity
D. Organic Matter and Organisms
   1. Kinds of organisms
2. Functions of organisms
3. Factors affecting organic matter levels

E. Soil Classification
   1. Diagnostic Horizons
   2. Soil Orders

F. Fertilizers and the Essential Elements
   1. Nutrients required by plants
   2. Fertilizer formulation
   3. Evaluating Soil Fertility

G. Soil Conservation
   1. Factors affecting erosion
   2. Erosion control practices
   3. Soil Loss Equation

H. Desert Soils and Tropical Soils
   1. Potential for future food production
   2. Problems with managing these soils

VI. INSTRUCTIONAL ACTIVITIES:

Lecture

VII. FIELD, CLINICAL, AND/OR LABORATORY EXPERIENCES:

None

VIII. RESOURCES:

A. Classroom
B. Textbook
C. Slide Projector

IX. GRADING PROCEDURES:

An hour exam is assigned after completing a topic or series of topics. Four or five hour exams are given plus a final.

In general the grades in this course are assigned as follows:
90% =  A
80% =  B
70% =  C
60% =  D

Instructor reserves the right to adjust the grading scale based on the performance of the class.

No extra work may be done to raise an individual’s grade.
X. ATTENDANCE POLICY:

Please refer to the most current copy of the Murray State University’s Undergraduate 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:

Elements of the Nature & Properties of Soils by N.C. Brady; R.R. Weil.

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 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.