MURRAY STATE UNIVERSITY
COURSE SYLLABUS OUTLINE

SCHOOL OF AGRICULTURE

COURSE NUMBER: AGR 455    CREDIT HOURS: 3

I. TITLE:

Soil Management

II. CATALOG DESCRIPTION:

The control of erosion, organic matter maintenance, effects of fertilizer on the environment, evaluating fertility and fertilization of major crops are emphasized. (Spring)

III. PURPOSE:

The purpose of this course is to study how to manage soils to keep erosion to a minimum, as well as, maintain soil fertility for various cropping systems.

IV. COURSE OBJECTIVES:

To develop a basic understanding of soil management.

V. CONTENT OUTLINE:

A. Soil Erosion
   1. Water Erosion
      a. Erosion process
      b. Damages caused by erosion
      c. Historical perspective
      d. Soil conservation service
      e. Land capability classes
      f. Erosion control practices
      g. Soil loss equation
   2. Wind Erosion

B. Soil Test Interpretations and Fertility Evaluation
   1. Missouri soil test reports
   2. Illinois soil test reports
   3. Kentucky soil test reports
   4. Deficiency symptoms
   5. Plant analysis

C. Tillage and Soil Conditions
   1. Effects of tillage upon soils
2. No-till farming
3. Other tillage systems
4. Uses of soil conditioners

D. Soil Organic Matter
   1. Factors that affect natural level
   2. Effect of different cropping systems on o.m. level

E. Nitrates in agriculture
   1. Nitrate poisoning
   2. Nitrate levels in rivers and streams
   3. Nitrate contamination of ground water

F. Nitrate levels under feed lots
   1. Organic soils
      a. Origin
      b. Characteristics
      c. Problems when used for cropping

G. Organic Gardening and Hydroponics
   1. Ion uptake by plants
   2. Plant composition
   3. Composting
   4. Use of hydroponics
   5. Basic requirements of a hydroponic system

H. Fertilizing Corn
   1. Nitrogen requirements
   2. Use of starter fertilizer
   3. Liming
   4. Phosphorous requirements
   5. Potassium requirements
   6. Trace elements

I. Fertilizing Soybeans
J. Fertilizing Alfalfa
K. Fertilizing Pastures
L. Fertilizing Wheat
M. Turf Management
N. Desert Soils
O. Tropical Soils
P. Strip Mine Reclamation
Q. Manure and Sewage Sludge Utilization

VI. INSTRUCTIONAL ACTIVITIES:

Lecture

VII. FIELD AND CLINICAL EXPERIENCES:

None
VIII. **RESOURCES:**

A. Classroom  
B. Blackboard  
C. Slide projector

IX. **GRADING PROCEDURES:**

An hour exam is assigned after completing a topic or series of topics. Three or four exams are given plus a final. In general, the grades in this course are assigned as follows:

\[ 
\begin{align*}
90 - 100 &= A \\
80 - 89 &= B \\
70 - 79 &= C \\
60 - 69 &= D \\
Below 60 &= E \\
\end{align*}
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I may use my professional judgment to lower these percentages based on the performance of the high individual’s grade.

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:**

None

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.