SOUTHEAST COMMUNITY COLLEGE
COURSE SYLLABUS
TRAN-WELDING-AG
Agriculture Management & Production Program
Revision Date: August 2020
Syllabus Statements

I. CATALOG DESCRIPTION

Course Number: **AGRI 1153**
Course Title Soils and Plant Nutrition
Prerequisite(s): None

Catalog Description: Study of the physical and chemical properties of soil as they apply to agriculture production, land evaluation, and land use planning. Practical application to farming in relation to the characteristics of the soil, conversion of soil, water and conservation tillage.

Credit Hours: 4.0
Class Hours: 45
Lab Hours: 45
Total Contact Hours: Total of Class + Lab Hours 90

II. COURSE OBJECTIVES: *Course will:*

1. Introduce parent materials
2. Introduce different soil textures, structures,
3. Introduce soil moisture stages
4. Introduce soil nutrition including the 17 essential nutrients
5. Introduce soil pH
6. Introduce soil survey and land use planning
7. Provide hands on application of soil testing
8. Provide hands on application of survey equipment
9. Introduce soil taxonomy
10. Provide hands on application of soil texture determination
11. Introduce soil organic matter
12. Provide hands on application of precision technology in soils

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

A. STUDENT LEARNING OUTCOMES: *Student will be able to:*

1. Demonstrate proper identification of common parent materials
2. Demonstrate proper identification of soil texture and structure by the following
   a. hand feel method
   b. textural triangle
   c. soil sediment method

3. Demonstrate proper soil moisture identification by the following methods
   a. hand feel method
   b. electrical resistance blocks and tensiometers
   c. electrical moisture probe

4. Demonstrate proper fertility recommendation using the following methods
   a. wet lab soil testing procedures
   b. crop use analysis

5. Demonstrate proper soil surveying techniques including the following
   a. properly closing on both profile and differential surveying
   b. properly record field notes on profile and differential surveying

6. Demonstrate understanding of soil pH
7. Demonstrate proper techniques for correcting soil pH
8. Demonstrate proper methods for soil organic matter accumulation
9. Demonstrate understanding of soil taxonomy
10. Demonstrate utilization of technology in soils such as WebSoil Survey
11. Demonstrate proper use of land capability classifications
12. Demonstrate crop management while maintaining proper soil stewardship

B. GENERAL EDUCATION LEARNING OUTCOMES

GELO #3: Critical Thinking & Problem Solving

Critical thinkers have the ability to evaluate a problem or assumption and determine an appropriate course of action. They use reason and evidence to make judgments and decisions. Critical thinking and problem solving skills rank highly among employer expectations.

Outcomes:

1) Collect, identify, interpret and analyze data.
2) Synthesize information to arrive at reasoned solutions to problems.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information)*

A. Soil origin, formation, and classification
B. Soil organic matter
C. Soil water and air
D. Soil acidity and liming practice
E. Soil survey and land use planning
F. Soil fertility and plant nutrition
G. Soil testing and fertilizer recommendation

V. INSTRUCTIONAL MATERIALS

A. Required Text(s): *The Nature & Properties of Soils*, 14th Edition; Nyle C. Brady and Ray R. Weil

B. Supplemental Text: *Soils of Nebraska*, Resource Report #2 University of Nebraska

C. Other Resources:
calculator, notebook(capable of holding handouts), pen, and pencil

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:

1. Lecture, classroom discussion
2. Laboratory demonstration and practice
3. Field demonstration and practice

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:

B. Grading of examinations, quizzes, and written assignments

C. Participation in laboratory and field exercises

D. Accurately demonstrate proper soil identification, sample collection and nutrient testing

E. Attendance will be in accordance with the SCC policy located in the student handbook

SCC STANDARD GRADING SCALE POLICY:

A+	**95-100**	**C+**	**75-79**
A	**90-94**	**C**	**70-74**
B+	**85-89**	**D+**	**65-69**
B	**80-84**	**D**	**60-64**
		F	**Below 60**

VIII. SPECIFIC COURSE REQUIREMENTS:

Student must meet all of the following to receive a passing grade

a. Achieve passing grade of 60% or higher, based on SCC grade scale

b. Participate in laboratory and outdoor exercises

c. Field demonstration and practice