

**SEWARD COUNTY COMMUNITY COLLEGE
COURSE SYLLABUS**

I. TITLE OF COURSE: AG2903- Soil Fertility and Fertilizers

**II. COURSE DESCRIPTION: 3 credit hours
3 credit hours of lecture and 0 credit hours of lab per week.**

Course will provide an introduction to the consumption, manufacture, properties, and reserves of fertilizer materials. Methods of application, effects on soil reactions and plant requirements of fertilizer nutrients will be discussed to inform students of specific fertilizer materials. For each unit of credit, a minimum of three hours per week with one of the hours for class and two hours for studying/preparation outside of class is expected.

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Pre-requisite: NA

III. PROGRAM AND/OR DEPARTMENT MISSION STATEMENT:

The agricultural program at Seward County Community College/Area Technical School provides opportunities to further each student's knowledge and apply specific methods and techniques to the management and performance of agricultural operations.

IV. TEXTBOOK AND MATERIALS:

Soil Fertility and Fertilizers, Havlin, J., S. Tisdale, W. Nelson, and J. Beaton, 7th edition.

V. SCCC OUTCOMES

Students who successfully complete this course will demonstrate the ability to do the following SCCC Outcomes.

I: Read with comprehension, be critical of what they read, and apply knowledge gained to real life

II: Communicate ideas clearly and proficiently in writing, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.

III: Communicate their ideas clearly and proficiently in speaking, appropriately adjusting content and arrangement for varying audiences, purposes, and situations.

IV: Demonstrate mathematical skills using a variety of techniques and technologies.

V: Demonstrate the ability to think critically by gathering facts, generating insights, analyzing data, and evaluating information

VI. COURSE OUTCOMES:

The student will be able to identify the levels of consumption and existing reserves of fertilizer materials.

The student will be able to identify the source of materials, fertilizer terminology, formulation, chemical and physical properties and manufacture of commercial fertilizers.

The student will be able to identify the scientific method and how to implement within the broader scope of natural resources management.

The student will be able to identify factors that influence natural resources management policy at local, state, and federal levels.

VII. COURSE OUTLINE:

1. Fertilizer Usage
2. Methods of Production of N Fertilizers
3. Nitrogen Uptake by Plants
4. Soil N and Associated Soil Reactions
5. Effect of N Source on Plant Growth
6. Methods of Production of P Fertilizers
7. Soil Phosphorus Reactions
8. Phosphorus Levels in Plant Tissue/P Leaching
9. Soil Testing for P/Fate of P
10. Potassium Functions, Soil Sources, Materials, and Reactions
11. Soil Acidity and Liming
12. Effects of Lime and Calcium on Soils
13. Sulfur Sources, Forms, Adsorption, and Testing
14. Use of Micronutrients in Agriculture
15. Nutrient Management Plans

VIII. INSTRUCTIONAL METHODS:

Lecture and class discussion.
Guest Speakers
Handouts, mass media, etc.
Presentations/Projects

IX. INSTRUCTIONAL AND RESOURCE MATERIALS:

NRCS Soil Management Video
USDA Soils Training Material
Cooperative Extension Service Soil Fertility Guidelines

X. METHODS OF ASSESSMENT:

Methods of assessing the general course outcomes and the specific course competencies include class participation, attendance, exam scores, homework assignments, and presentation assignments.

XI. ADA STATEMENT:

Under the Americans with Disabilities Act, Seward County Community College will make reasonable accommodations for students with documented disabilities. If you need support or assistance because of a disability, you may be eligible for academic accommodations. Students should identify themselves to the Dean of Students at 620-417-1106 or going to the Student Success Center in the Hobbie Academic building, room 149 A.