Course Information Form (CIF)

Course Code: AGB 213

Course Title: Soil Fertility and Fertilizers

Department: Agricultural Technologies
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 01.0304
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 3-0-3
Credit Hour Distribution:

Lecture: 3	Lab: 0	Clinical: 0	**Total: 3**

General Course Information

Catalog Description

Use of fertilizers for peak production at optimum cost; evaluation and comparison of different forms of macro- and micro-nutrients, their manufacture, handling, and application; plant and soil chemistry.

General Course Objectives

To acquire an understanding of plant nutrient requirements and how to provide for those needs to achieve efficient crop production.

Minimum Placement Levels

English	Reading	Math
Placement out of ENG 098	Placement out of CCS 098	Placement out of MAT 060

Prerequisites

Credit in AGB 200

Methods of Evaluation

The minimum methods of evaluation include: 11 chapter assignments, 3 hourly tests, and 1 final examination.

Instructional Materials and Additional Supplies

Soil Fertility Manual, Current edition. The Fertilizer Institute.

Course Content

General Learning Outcomes (GLOs)

- Critical Thinking and Information Literacy: Students will demonstrate the ability to evaluate perspectives, evidence, and implications, and to locate, assess, and use information effectively.
- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Introduction to Course Content	1. Summarize course content as it relates to soil fertility and fertilizer use in Central Illinois.	2	0	0
Soil and Plant Chemistry	1. Define common terms used in soil and plant chemistry, and relate their significance to soil development, fertility, and productivity. 2. List the 17 essential plant nutrients, define their nutritional role, and indicate the approximate quantity of each required. 3. Describe deficiency symptoms in various plant species.	8	0	0
Nutrient Requirements	1. Interpret soil tests. 2. Propose appropriate fertilizer and limestone recommendations for different crops (corn, soybeans, small grains, forage crops, turf, etc.) and situations (acid or alkaline soils, soil nutrient supplying power, etc.).	8	0	0
Application and Use of Fertilizer Materials	1. List common fertilizer and liming materials used, their approximate nutrient content or neutralizing value, approximate short-term and/or availability to the plant, and effect on the soil. 2. Calculate the quantity required to supply the necessary plant food or liming material. 3. Recommend application times, placement, and methods.	8	0	0
Nontraditional Fertility Recommendations	1. Evaluate manure, sludge, and other organic materials as soil amendments. 2. Compare their value and crop response elicited relative to inorganic soil amendments.	5	0	0
Tillage and Its Effects on Soil	1. List and evaluate tillage practices as they relate to soil fertility, and changes in fertility practices due to tillage. 2. Evaluate nontraditional fertility recommendations, and their origin and basis. 3. Identify fertility alternatives.	6	0	0
Soil Fertility Records	1. Keep correct soil records. 2. Evaluate and use computerized fertility programs.	4	0	0
Effects of Fertilizer Use in the Environment	1. Evaluate the short- and long-term effects of commercial fertilizer use on the environment. 2. Identify governmental resources/programs to protect the environment.	4	0	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
45	0	0