

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. AGRI

COURSE NUMBER: 2203

NUMBER OF CREDITS: 3

Lecture: 2 Lab: 1 OJT: 0

Course Title:
Soil Fertility and Fertilizer

Catalog Description:
Soil Fertility and Fertilizer explores the chemical elements in the soil and plants. Soil testing, tissue testing, fertilizer nutrients, fertilizer products, and fertility recommendations are studied.

Prerequisites or Necessary Entry Skills/Knowledge:
None

FULFILLS MN TRANSFER CURRICULUM AREA(S)

- ☐ Goal 1: Communication: By meeting the following competencies:
- ☐ Goal 2: Critical Thinking: By meeting the following competencies:
- ☐ Goal 3: Natural Sciences: By meeting the following competencies:
- ☐ Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
- ☐ Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
- ☐ Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
- ☐ Goal 7: Human Diversity: By meeting the following competencies:
- ☐ Goal 8: Global Perspective: By meeting the following competencies:
- ☐ Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
- ☐ Goal 10: People and the Environment: By meeting the following competencies:

Topics to be Covered
Characteristics of Soil
Plant Nutrients
Characteristics of Clay
Macro Nutrients – Nitrogen, Phosphorus, & Potassium
Secondary Nutrients – Sulfur, Calcium, Magnesium
Micro Nutrients
Soil pH and Salinity
Soil Organisms
Organic Matter
Soil & Plant Tissue Testing
Reading a Soil Test
Fertility and Lime Recommendations
Fertilizer Products
Manure as Fertilizer
Site Specific Applications

Student Learning Outcomes	
Describe soil origin and physical properties of soil.	
Classify essential elements required by plants.	
Describe how plants absorb nutrients.	
Describe the interaction of plant nutrients and soil.	
Differentiate the effects of fertilizer elements on plant growth and development.	
Identify nutrient deficiencies	
Analyze a soil test report.	
Calculate fertilizer and lime recommendations with costs.	
Describe major fertilizer products and their analysis.	
Describe the effects of pH on nutrient interaction and plant uptake.	
Explain the benefits of organic amendments and manure for soil fertility and plant nutrition.	
Collect soil samples on a grid	

Is this course part of a transfer pathway: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Revised Date: 6/2021