MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE
COURSE OUTLINE

Faculty are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the Collegewide Curriculum Committee.

DEPT.: Agriculture  COURSE NO.: 2203

NUMBER OF CREDITS: 3

COURSE TITLE: Soil Fertility and Fertilizer

CATALOG DESCRIPTION: Explores the chemical elements in the soil and plants, soil testing and tissue testing, fertilizer and lime recommendations, and fertilizer nutrients

AUDIENCE: Agriculture students – transfer and technical

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)

Area : by meeting the following competencies:
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PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE:

LENGTH OF COURSE: 1 semester

THIS COURSE IS USUALLY OFFERED:
Every other year ☑ fall ☐ spring ☐ summer ☐ undetermined ☐

Four goals are emphasized in course at Minnesota West Community & Technical College:

1) ACADEMIC CONTENT:
   1. To introduce the subject of soils as a source of nutrients, air, and water for plants.
   2. To familiarize the student with the description, method of manufacture, chemical characteristics, handling characteristics and crop response to nitrogen, phosphorus, potassium, micronutrient and multinutrient fertilizers.
   3. To create an awareness of the nature and properties of nitrogen bearing organic wastes of plant and animal origin and the value of these materials as fertilizers and feedstuffs.
   4. To discuss fertilizer needs, problems related to supplying these needs, and possible alternatives for solving the problems.
   5. To recognize different fertilizer materials or carriers; to calculate the cost per pound of a nutrient when given the cost per ton of fertilizer; to formulate multinutrient fertilizers, and to calculate the quantity of fertilizer required when given a recommendation for a certain amount of actual nutrients to be added to the soil.
   6. To introduce GPS/GIS technology as it relates to fertilizer management.

2) THINKING SKILLS:
   1. Determine a fertilizer program to use
   2. Calculating types and rates of fertilizer to apply
3. Determining the least cost fertilizer usage

3) COMMUNICATIONS SKILLS:
   1. Written tests
   2. Group work
   3. Class discussion
   4. Worksheets

4) HUMAN DIVERSITY:
   1. The need for fertility of soils to provide food to prevent starvation throughout the world.

TOPICS TO BE COVERED:
   1. Organic Amendments
   2. Soil pH and Salinity
   4. Micronutrients
   5. Fertilizers and Nutrient Management
      A. Costs
      B. Timing of Application
   6. GPS/GIS – site specific

LIST OF EXPECTED COURSE OUTCOMES: See above goals

LEARNING/TEACHING TECHNIQUES used in the course are:
☐ Collaborative Learning ☒ Problem Solving
☒ Student Presentations ☐ Interactive Lectures
☐ Creative Projects ☐ Individual Coaching
☒ Lecture ☒ Films/Videos/Slides
☒ Demonstrations ☐ Other (describe below)
☒ Lab

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:
☒ Reading ☒ Tests ☐ Individual Projects
☐ Oral Presentations ☒ Worksheets ☐ Collaborative Projects
☒ Textbook Problems ☐ Papers ☐ Portfolio
☒ Group Problems ☐ Term Paper
☐ Other (describe below)

EXPECTED STUDENT LEARNING OUTCOMES:
Grading policies and evaluation procedures – as attached

Veteran Services: Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

The information in this course outline is subject to revision

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.