

# MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

## COURSE OUTLINE

**DEPT. AGRI**

**COURSE NUMBER: 2204**

**NUMBER OF CREDITS: 3**

**Lecture: 3 Lab: 0 OJT: 0**

### Course Title:

Introduction to Precision Agriculture

### Catalog Description:

Introduction to Precision Agriculture is intended to serve as an introduction to GPS (Global Positioning Systems) and GIS (Geographical Information Systems) with an emphasis on agricultural use. Topics include precision farming, positioning systems, yield monitoring, and variable rate technology.

### 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

Global Positioning System

Yield Monitoring and Mapping

Variable Rate Application

Soil Sampling

Remote Sensing

Sprayer Components

Planter Components

Auto Steer Components

Geographic Information System

### Student Learning Outcomes

Identify the segments and components of the Global Positioning System

Explain how the Global Positioning System operates

Describe differential technology

Identify the components of a yield monitoring system
Create a boundary and grid a field
Collect soil samples on a grid
Explain Normalized Difference Vegetation Index (NDVI)
Compare NDVI maps
Identify variable rate sprayer components
Identify variable rate planter components
Install and calibrate an auto-steer system
Operate precision displays

**Is this course part of a transfer pathway: Yes  No**

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Revised Date: 6/2021