



South Central College

MEAG 1207 Precision Agriculture Software

Course Outcome Summary

Course Information

Description	This course will provide hands-on training in Spatial Management System (SMS) precision agriculture software including yield monitoring, planting, spraying, and more. It will cover an introduction of basic SMS systems used in agriculture, software troubleshooting, data collection and analysis. Students will also be exposed to complex mapping systems including field bordering, zone mapping, and yield mapping. (Prerequisite: PLSC 1205)
Total Credits	3
Total Hours	64

Types of Instruction

Instruction Type	Credits/Hours
Lecture	2/32
Lab	1/32

Pre/Corequisites

PLSC 1205

Institutional Core Competencies

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Install various SMS programs in computers, tablet devices, and agricultural equipment.

Learning Objectives

- Choose correct software to correlate with machinery platforms.
- Explain the installation process of SMS software.
- Troubleshoot software communication problems among computers, tablets, and equipment.

2. Identify the main components of precision agriculture systems.

Learning Objectives

- Describe the different imagery components of precision agriculture systems.

Explain what elements make an agricultural software a precision system.
Determine product capabilities of each precision agriculture system.

3. Troubleshoot various wiring schematics of installed precision agricultural software systems.

Learning Objectives

Calibrate various monitors for each system.
Demonstrate how wiring systems work to install Real-time Kinematic (RTK) units.
Install wiring harness systems.

4. Analyze spatial data.

Learning Objectives

Import data into SMS software programming.
Classify data for customer needs.
Interpret spatial data within SMS systems.

5. Create digital maps within precision agriculture systems for data interpretation and analysis.

Learning Objectives

Create planting maps.
Create yield maps.
Create soil zone maps.

6. Interpret maps for making field fertilizer prescriptions, seeding rate recommendations, and variable rate chemical application.

Learning Objectives

Write prescriptions for fertilizer and chemical application.
Analyze topographical maps for seeding rate recommendations.
Create grade mapping for tile installation plans.

7. Apply communication skills to orally convey comprehensive ideas and analytical assessments of data to customers.

Learning Objectives

Explain field prescriptions to customers.
Discuss software system options with customers.
Write software directions for customers to follow for equipment and systems.

8. Integrate remote sensing, aerial and satellite imagery into Geographic Information System (GIS) systems correctly.

Learning Objectives

Import imagery from various outlets into software for data analyzing.
Interpret imagery for various prescriptions.
Compile multiple images to overlay data and backup prescriptions.

9. Utilize various software programs including Farm Command, Agvance, AgLeader, Farm Works, and Precision Planting.

Learning Objectives

Compare various software programs for benefits and drawbacks of each system.
Choose correct software for each brand of equipment.
Integrate mapping throughout various systems to utilize multiple systems and equipment.

SCC Accessibility Statement

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-5847.

Additional information and forms can be found at: www.southcentral.edu/disability

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