



South Central College

MEAG 1206 Precision Agriculture Equipment

Course Outcome Summary

Course Information

Description This class is an introduction to many of the equipment systems involved in precision agriculture. The areas covered will include equipment used for steering and guidance, fertilizer and chemical application, and harvest data collection. Basic understanding of DC electrical systems and basic hydraulics will be reviewed along with computer skills needed for upgrading system components. Instruction will include offsite tours and demonstrations to assure current information is available. (Prerequisites: None)

Total Credits 3

Total Hours 64

Types of Instruction

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

Pre/Corequisites

NONE

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. Communicate effectively both verbally and in writing

Learning Objectives

Demonstrate effective communication skills verbally and written
Complete clearly written and concise service orders
Listen to customer to determine concern

2. Read and interpret electrical and hydraulic circuits using diagrams

Learning Objectives

Follow electrical current paths to determine proper connection
Follow hydraulic diagrams to determine proper operation and installation
Read service manual to determine how correct connections operate

3. Check electrical and hydraulic circuits using appropriate test equipment

Learning Objectives

Install hydraulic test fittings and gauges
Check voltage with multimeter and interpret results
Choose proper fittings to make hydraulic connections

4. Upgrade firmware

Learning Objectives

Obtain proper firmware version from manufacturers
Hook up computer to monitor to install firmware
Check monitor to confirm firmware upgrade

5. Perform basic maintenance as needed

Learning Objectives

Chart system maintenance with manufacturer's instructions
Investigate what proper maintenance saves in operational costs

6. Use resources to investigate problems with precision farming equipment

Learning Objectives

Check with manufacturer's flow charts to determine solution to problem
Communicate with equipment dealer for historical solutions to problems

7. Calibrate equipment

Learning Objectives

Adjust yield monitor
Adjust angles and clearances for proper operation
Adjust systems for proper data collection

8. Navigate corporate equipment databases

Learning Objectives

Remove field data from monitors
Transfer data from one machine to another
Categorize information to unit and season

9. Incorporate data and information to make adjustments

Learning Objectives

Adjust planter equipment for varying application rates
Adjust application rate for herbicide and insecticide equipment
Interpret harvest maps to assist with rate decisions

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) 332-7222.

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

This material can be made available in alternative formats by contacting the Academic Support Center at 507-389-7222.

How to Get the Most From this Learning Experience

- Take charge of your own learning. Raise questions, probe, explore, go after what you need.
- Be open. Use your imagination, consider new possibilities, and create something new for yourself.
- Give as well as receive. Give liberally to co-learners and be prepared to receive a great deal from them.
- Have fun. Plan to thoroughly enjoy this opportunity to learn and to grow in your professional competence and satisfaction.

Students' Right to Know

Students have a right to know about the college policies on "Harassment and Discrimination", "Crime Awareness and Campus Security," "Drug and Alcohol Abuse," "Employee and Student Conduct," "Academic Honesty," "Student Grievance/Complaint Process," and "Student Data Privacy." This information is available at southcentral.edu . Call this phone numbers if you see or experience the following: harassment or discrimination 507-389-7200; criminal acts, drug or alcohol violations 507-389-7200.