Course Information Form (CIF)

Course Code: AGB 219

Course Title: Precision Hardware Systems

Department: Agricultural Technologies
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 01.0205
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 1-2-2
Credit Hour Distribution:

Lecture: 1	Lab: 2	Clinical: 0	**Total: 2**

General Course Information

Catalog Description

Introduction to operation, troubleshooting, repair and calibration of precision agriculture components of auto-guidance systems, planters, combines, and application equipment.

General Course Objectives

This course will provide students with the skills needed to operate, troubleshoot, repair, and calibrate precision agriculture hardware systems of auto-guidance, planters, combines, and various application equipment including sprayers, fertilizer spreaders, and variable rate controllers.

Minimum Placement Levels

English	Reading	Math
None	Placement into CCS 098	None

Prerequisites

None

Methods of Evaluation

3-5 performance quizzes, 3-5 lab practicals, and a mid-term and final examination.

Instructional Materials and Additional Supplies

None.

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Guidance Systems	1. List and describe the components of an auto-guidance system. 2. Describe how to set up, calibrate, troubleshoot, and operate auto-guidance systems.	1	4	0
Precision Planter Technology	1. List and describe the electrical and hydraulic components of a planter. 2. Demonstrate how to calibrate, troubleshoot, repair, and operate precision planting hardware components.	3	6	0
Combines and Yield Monitors	1. List and describe the components of a yield monitoring system. 2. Demonstrate how to set up, calibrate, and troubleshoot yield monitoring hardware components.	3	6	0
Precision Application Equipment	1. List and describe the electrical and hydraulic components of sprayers, fertilizer spreaders, nitrogen application equipment, and variable rate controllers and monitoring systems. 2. Demonstrate how to calibrate, operate, and troubleshoot precision hardware components of sprayers, fertilizer spreaders, nitrogen application equipment, and variable rate controllers and monitoring systems.	8	14	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
15	30	0