

Course Code: DPE 230

Course Title: Electronic Systems and Accessories

Department: Agricultural Technologies

Effective Date: Summer 2026

PCS Code: 1.2 - Occupational/Technical Instruction

CIP Code: 47.0604

Repeatability: 0

Credit Hours

Catalog Notation: 2-2-3

Credit Hour Distribution:

Lecture: 2

Lab: 2

Clinical: 0

Total: 3

General Course Information

Catalog Description

Installation, analysis, testing, programming, diagnosis, and repair of monitoring systems, instrumentation, and other specialized electronic and computer-controlled equipment on agricultural machinery and heavy equipment.

General Course Objectives

Learn to read electrical schematics. Learn how pulse width modulation functions. Learn the Controller Area Network (CAN) bus system. Learn how to troubleshoot electrical problems: 12 volt, 24 volt, and network problems. Learn how to retrieve error codes and how to use error codes in diagnosis and troubleshooting. Learn the CCD link system.

Minimum Placement Levels

English

None

Reading

None

Math

None

Prerequisites

Credit in DPE 130

Methods of Evaluation

Students will be given a minimum of 8 unit quizzes, 2 unit exams, and 8 lab practicals.

Instructional Materials and Additional Supplies

No textbook required. Uses manufacturers' tech manuals.

Students will need the required tool set for the Diesel Power program.

Course Content

General Learning Outcomes (GLOs)

- Critical Thinking and Information Literacy: Students will demonstrate the ability to evaluate perspectives, evidence, and implications, and to locate, assess, and use information effectively.
- 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
Electrical Schematics	1. Identify electrical symbols and sub systems. 2. Interpret system schematics.	12	2	0
Pulse Width Modulation	1. Describe how to troubleshoot pulse width systems. 2. Perform pulse width modulation control of components.	4	4	0
Error Codes	1. Demonstrate the ability to retrieve error codes on equipment. 2. Use error codes in troubleshooting to clear stored codes.	2	10	0
CAN Bus	1. Describe what the CAN Bus system is. 2. Demonstrate how to use computers in troubleshooting with the CAN Bus system. 3. Troubleshoot the CAN Bus system.	6	8	0
CCD Link	1. Describe what the CCD Link system is. 2. Describe how computer test equipment can be used with the CCD link. 3. Troubleshoot problems with the CCD link.	6	6	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	30	0