

**Course Code:** DPE 239

**Course Title:** Truck Suspension, Steering, and Brakes

**Department:** Agricultural Technologies

**Effective Date:** Summer 2026

**PCS Code:** 1.2 - Occupational/Technical Instruction

**CIP Code:** 47.0604

**Repeatability:** 0

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### Credit Hours

**Catalog Notation:** 2-2-3

**Credit Hour Distribution:**

Lecture: 2

Lab: 2

Clinical: 0

**Total: 3**

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### General Course Information

#### Catalog Description

Suspension systems, hydraulic and air brakes, and steering mechanisms and systems in class 6-8, on-highway trucks; theory of operation, diagnosis, and repair with emphasis on performing inspections, preventive maintenance, and required service.

#### General Course Objectives

- To cover different types of motor truck suspension systems, both operation and repair.
- To learn air and hydraulic brakes.
- To cover operation and repair of both types of braking systems.
- To learn steering systems used on motor trucks.
- To learn operation and repair of different types of steering systems.

#### Minimum Placement Levels

**English**

None

**Reading**

None

**Math**

None

#### Prerequisites

Credit in DPE 133

#### Methods of Evaluation

Students will be given a minimum of 6 chapter quizzes, 6 chapter assignments, 2 unit exams, and 8 lab practicals.

#### Instructional Materials and Additional Supplies

Brakes, Steering and Suspension Systems, 978-1-4180-1372-1

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 |
|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------|----------------|
| Truck Brake Systems: Theory of Air and Hydraulic Systems | 1. Summarize the theory of operation of both air and hydraulic brakes.<br>2. Describe different braking systems used on motor trucks.<br>3. Explain repair skills on air and hydraulic braking systems. | 10            | 10        | 0              |
| Motor Truck Suspension Systems: Theory of Operation      | 1. Describe how different types of suspension systems operate and function.<br>2. Summarize how suspension systems relate to truck performance.<br>3. Explain proper repair of suspension systems.      | 10            | 10        | 0              |
| Truck Steering Systems: Theory of Operation              | 1. Describe how different types of steering systems function and the theory and operation of steering systems.<br>2. Troubleshoot steering systems.                                                     | 10            | 10        | 0              |

#### Total Contact Hours

| Lecture Hours | Lab Hours | Clinical Hours |
|---------------|-----------|----------------|
| 30            | 30        | 0              |