# DIESEL ELECTRICITY INTRODUCTION

## Course Syllabus

<table>
<thead>
<tr>
<th>Course Number:</th>
<th>TRUK-0890</th>
<th>OHLAP Credit:</th>
<th>No</th>
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<tbody>
<tr>
<td>OCAS Code:</td>
<td>None</td>
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<tr>
<td>Course Length:</td>
<td>60 Hours</td>
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<td>Career Cluster:</td>
<td>Transportation, Distribution, and Logistics</td>
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<tr>
<td>Career Pathway:</td>
<td>Medium/Heavy Diesel Truck Repair</td>
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<tr>
<td>Career Major(s):</td>
<td>Diesel Service Technician</td>
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**Course Description:**
In this course, students learn about magnetism, basic electrical circuits, and schematics. They will use Ohm's Law to solve problems, test and replace defective fuses, fusible links, circuit breakers, relays and solenoids. Electrical meters will be used to check applied voltages current flow, resistance, and to find shorts and grounds.

**Textbooks/Materials:**
- PTTTS Truck Web-Bases Training Online Courses

**Course Objectives:**

A. **Solve Electrical Problems.**
   1. Identify and describe the elements of a typical electrical circuit.
   2. Explain what causes a flow of electricity.
   3. Discuss how magnetism and electricity can be related.
   4. Name common electrical conductors, insulators, and semiconductor materials.
   5. Identify basic electrical symbols.
   6. Discuss Ohm's Law and use it to solve problems.
   7. Draw a basic electrical schematic.
   8. Read, interpret, and diagnose electrical/electronic circuits using wiring diagrams. (P1-V.A.1)
   9. Inspect and clean electrical connector plugs.
   10. Inspect, test, and replace defective fuses, fusible links, circuit breakers, relays, and solenoids.
   11. Check continuity in electrical/electronic circuits using appropriate test equipment. (P1-V.A.2)

B. **Use Electrical Meters.**
   1. Check applied voltages, circuit voltages, and voltage drops in electrical/electronic circuits using a digital multimeter (DMM). (P1-V.A.3)
   2. Check current flow in electrical/electronic circuits and components using a digital multimeter (DMM) or clamp-on ammeter. (P1-V.A.4)
   3. Check resistance in electrical/electronic circuits and components using a digital multimeter. (P1-V.A.5)
   4. Find shorts, grounds, and opens in electrical/electronic circuits. (P1-V.A.6)
   5. Diagnose parasitic (key-off) battery drain problems. (P1-V.A.7)
6. Inspect and test spike suppression diodes/resistors; replace as needed. (P3-V.A.9)
7. Inspect and test fusible links, circuit breakers, relays, solenoids, and fuses; replace as needed (P1-V.A.8)
8. Activate self-diagnostic functions on computer controlled systems.
9. Check frequency and pulse width in electrical/electronic circuits using appropriate test equipment. (P3-V.A.10)

1 ODCTE Objective
Coding indicates NATEF alignment.
All unmarked objectives are TTC instructor developed.

Teaching Methods: The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.

Grading Procedures: 1. Students are graded on theory and shop practice and performance.
2. Each course must be passed with seventy (70%) percent or better.
3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%.

Description of Classroom, Laboratories, and Equipment: Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

Available Certifications/College Credit: The student may be eligible to take state, national or industry exam after completion of the program. College credit may be issued from Oklahoma State University-Okmulgee or Tulsa Community College. See program counselor for additional information.

College Credit Eligibility: The student must maintain a grade point average of 2.0 or better.