

Report : Assessment Cycle Details for : Diesel Powered Equipment Technology

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Workspace : Program Assessment Plans

Assessment Plan: 2018-2020 Assessment Cycle: Assessment Plan and Assessment Findings

Assessment Plan Template: Academic Program Assessment Plan Template

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## Measures and Findings

### *Diesel Powered Equipment Technology Outcome Set (2018-2020)*

#### Outcome

##### **SLO 1**

*Demonstrate the ability to identify components of cooling systems and troubleshoot for issues.*

##### **Measure**

*Measure 1 (SLO 1)*

**DIRECT - EXAM**

**Course Alignment:**

DPET 1140

**Acceptable Target:**

At least 70% of Diesel Powered Equipment Technology students will be able to identify proper procedures for cooling system service including distinguishing between different types of coolant characteristics, testing coolant concentration and additives, and identifying components and procedures for testing proper operation.

**Measure Description:**

Written Test - Chapter 13: Engine Construction & Operations - Multiple choice test

##### **Findings**

*for Measure 1 (SLO 1)*

**Summary of Findings:**

56.8% of students successfully completed objective.  
(37 total students: 21 passed, 16 failed)

**Target Achievement:**

Not Met

**Analysis of Results:**

The complexity and variation of the different cooling systems between make and models has proven to be challenging to students. This resulted in a lack of participation from a high percentage of students, that would not access the service information for the specific vehicle.

## ***Measure***

### *Measure 2 (SLO 1)*

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#### **DIRECT - OTHER**

#### **Course Alignment:**

DPET 1140

#### **Acceptable Target:**

At least 85% of Diesel Powered Equipment Technology students will be able to verify level and type, condition of coolant, consumption and its cause, test freeze protection level, and additive package concentration and determine needed action.

#### **Measure Description:**

Performance Test - Assessed in Chapter 13 in the form of a hands-on skill demonstration - CDX Tasksheet Number H068

## ***Findings***

### *for Measure 2 (SLO 1)*

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#### **Summary of Findings:**

56.8% of students successfully completed objective.  
(37 total students: 21 passed, 16 failed)

#### **Target Achievement:**

Not Met

#### **Analysis of Results:**

The many different types of coolant that are available for use in equipment today, has proven to be difficult to distinguish by students. Often, they have misidentified the type. The identification of consumption cause has also proven to be a challenge. The cause has been repeatedly misidentified. More exploration of types seems to be needed. More repetition on identification of consumption is needed.

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## **SLO 2**

*Demonstrate the ability to identify and properly use electrical testing equipment commonly used in industry.*

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## ***Measure***

### *Measure 1 (SLO 2)*

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#### **DIRECT - EXAM**

#### **Course Alignment:**

DPET 1210

#### **Acceptable Target:**

At least 70% of Diesel Powered Equipment Technology students will be able to identify electrical test equipment and proper procedures for their use.

#### **Measure Description:**

Written Exam - Chapter 10 Electrical Test Instruments - Multiple choice test

## ***Findings*** *for Measure 1 (SLO 2)*

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### **Summary of Findings:**

70.6% of students successfully completed objective.  
(17 total students: 12 passed, 5 failed)

### **Target Achievement:**

Met

### **Analysis of Results:**

The identification of electrical test equipment was achieved by 70% of all students. The majority of students that did not ID the equipment were not present or late for the class. Overall the measure was a success. Attendance of all should be stressed.

## ***Measure*** *Measure 2 (SLO 2)*

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### **DIRECT - OTHER**

### **Course Alignment:**

DPET 1210

### **Acceptable Target:**

At least 80% of Diesel Powered Equipment Technology students will be able to check applied voltages, circuit voltages, and voltage drops in electrical/electronic circuits using appropriate test equipment.

### **Measure Description:**

Performance Test - Assessed in Chapter 10 in the form of a hands-on skill demonstration - CDX Tasksheet Number H273

## ***Findings*** *for Measure 2 (SLO 2)*

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### **Summary of Findings:**

94.1% of students successfully completed objective.  
(17 total students: 16 passed, 1 failed)

### **Target Achievement:**

Exceeded

### **Analysis of Results:**

The implementation of training aids and instructional methodology has proven to be exceptional in this area. Students showed competency in the areas measured by demonstrating hands on skill evaluations.

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## **SLO 3**

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## ***Measure***

*Demonstrate the ability to identify components and perform repairs to wheel, rim and hub components.*

### *Measure 1 (SLO 3)*

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**DIRECT - EXAM**

**Course Alignment:**

DPET 2210

**Acceptable Target:**

At least 70% of Diesel Powered Equipment Technology students will be able to identify components and proper service procedures and tools used in servicing wheels, rims, and hubs.

**Measure Description:**

Written Exam - Chapter 24 Wheel Rims and Hubs - Multiple Choice Test

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### ***Findings***

#### *for Measure 1 (SLO 3)*

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**Summary of Findings:**

88.9% of students successfully completed objective.  
(9 total students: 8 passed, 1 failed)

**Target Achievement:**

Exceeded

**Analysis of Results:**

The proper identification of components and procedures was properly identified by students. The results show an adequate absorption rate of information.

### ***Measure***

#### *Measure 2 (SLO 3)*

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**DIRECT - OTHER**

**Course Alignment:**

DPET 2210

**Acceptable Target:**

At least 85% of Diesel Powered Equipment Technology students will be able to clean, lubricate, inspect, and replace wheel bearings and races/cups, replace seals and wear rings, inspect spindle/tube, inspect and replace retaining hardware, adjust wheel bearings, and verify using the dial indicator method.

**Measure Description:**

Performance Test - Assessed in Chapter 24 in the form of a hands-on skill demonstration - CDX Tasksheet Number H224

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### ***Findings***

#### *for Measure 2 (SLO 3)*

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**Summary of Findings:**

77.8% of students successfully completed objective.  
(9 total students: 7 passed, 2 failed)

**Target Achievement:**

Not Met

**Analysis of Results:**

Improper procedure and technique used by some students resulted in a less than desired result. The ability to inspect components, and evaluate for reuse or replacement proved to be difficult for some. Supplemental material discussing parts reuse criteria may be needed.

**SLO 4**

*Demonstrate the ability to identify components and conduct performance test on heating and air conditioning systems.*

**Measure**

*Measure 1 (SLO 4)*

**DIRECT - EXAM**

**Course Alignment:**

DPET 2220

**Acceptable Target:**

At least 70% of Diesel Powered Equipment Technology students will be able to identify the basic principles of heating and refrigeration, identify heat load, and distinguish between different types of heat and the principles of heat transfer and control (removal and addition).

**Measure Description:**

Written Exam - Chapter 51 Principles of Heating and Air-Conditioning Systems - Multiple Choice Test

**Findings**

*for Measure 1 (SLO 4)*

**Summary of Findings:**

44.4% of students successfully completed objective.  
(9 total students: 4 passed, 5 failed)

**Target Achievement:**

Not Met

**Analysis of Results:**

The lack utilization of provided pretest and instructional materials before taking the test resulted in a high failure rate. Students that participated in the pretest, and those that utilized the study guides met the goals. Emphasis needs to be placed on preparation.

**Measure**

*Measure 2 (SLO 4)*

**DIRECT - OTHER**

**Course Alignment:**

DPET 2220

**Acceptable Target:**

At least 70% of Diesel Powered Equipment Technology students will be able to identify different types of a/c systems, there components, and conduct performance test on HVAC systems and determine any needed action.

**Measure Description:**

Performance Test - Assessed in Chapter 51 in the form of a hands-on skill demonstration - CDX Tasksheet Number H338

***Findings***

*for Measure 2 (SLO 4)*

**Summary of Findings:**

55.6% of students successfully completed objective.  
(9 total students: 5 passed, 4 failed)

**Target Achievement:**

Not Met

**Analysis of Results:**

The complexity and variations of a/c system types and controls proved difficult for students to distinguish. The direct cause of malfunctioning a/c systems also was misidentified at a high rate. Expansion of instruction and hands on exercises should be implemented.

**SLO 5**

*Demonstrate the ability to identify tooling and procedures for preventative maintenance as well as properly use diagnostic equipment for retrieval of diagnostic codes.*

***Measure***

*Measure 1 (SLO 5)*

**DIRECT - EXAM**

**Course Alignment:**

DPET 2240

**Acceptable Target:**

At least 70% Diesel Powered Equipment Technology students will be able to select and identify tooling and procedures involved in a preventative maintenance inspection.

**Measure Description:**

Written Exam - Chapter 55 Preventative Maintenance and Inspection - Multiple Choice Test

***Findings***

*for Measure 1 (SLO 5)*

**Summary of Findings:**

50.0% of students successfully completed objective.  
(8 total students: 4 passed, 4 failed)

**Target Achievement:**

Not Met

**Analysis of Results:**

Only 50% of students were able to identify tooling used in Preventive maintenance. Examination of the pretest participation rate proved it to be low. Implementation of visual aids and stressing of the importance of the pretest is needed. Students also need to utilize the study guides provided.

## ***Measure***

### *Measure 2 (SLO 5)*

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**DIRECT - OTHER**

**Course Alignment:**

DPET 2240

**Acceptable Target:**

At least 85% of Diesel Powered Equipment Technology students will be able to use electronic service tool(s) or on-board diagnostic system, retrieve engine monitoring information, check and record diagnostic codes and trip/operational data (including engine, transmission, ABS, and other systems).

**Measure Description:**

Performance Test - Assessed in Chapter 55 in the form of a hands-on skill demonstration - CDX Tasksheet Number H430

## ***Findings***

### *for Measure 2 (SLO 5)*

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**Summary of Findings:**

0% of students successfully completed objective.  
(8 total students: 0 passed, 8 failed)

**Target Achievement:**

Not Met

**Analysis of Results:**

The assessment needs to be given at a latter time during the course. It was given at the beginning of the course, as a result student were unprepared for the complexity of the task. Multiple types of diagnostic software and communication interfaces must be used. The selection of the correct components proved to be overwhelming for the student. Expanded instruction and use should be implemented before evaluation of this measure. Implementation of this measure should be rescheduled for the end of the course.

