

# **NORTHEAST METRO 916 CAREER & TECHNICAL CENTER**

## **Course Name: Diesel Trucks and Engine Technology**

### **Instructor Information**

**Name: Dave Kelsey**

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**Telephone: 651-415-5638**

**Room: E 1581**

**Office Hours: 7:30 am to 3:30 pm.**

### **Course Information**

**Upon completion of Diesel Trucks and Engine Technology students will:**

- 1. Understand and have ability to work safely in a shop environment**
- 2. Demonstrate knowledge of engine components and how they function together in a running engine**
- 3. Perform work as a professional technician in a shop environment**

### **Course Outline**

**1<sup>st</sup> Semester:**

**1<sup>st</sup> Quarter: Gasoline Engines (A1)**

- a. Shop Safety and Tools**
- c. Engine components vocabulary**
- d. Engine Disassembly and Parts Analysis**
- e. Engine Math and Measurements**
- f. Engine compression testing**

**Second year students will also complete:**

- a. Class or shop leadership role**
- b. Cylinder leak down testing**
- c. Paper on American Car Culture**

**2nd Quarter: Mechanic Skills (A1)**

- a. Proper assembly, torque, gasket sealing and component alignment**
- b. Engine Oil, Cooling and their systems**
- c. Basic Electrical Test Equipment**
- d. Charging and Starting Systems diagnosis and repair**
- e. Gasoline Engine timing, testing and running**
- f. Introduction to GMAW welding**

**Second year students will also complete:**

- a. Advanced welding project**
- b. Basic diagnostic scan tool use**

**2<sup>nd</sup> Semester:**

**3<sup>rd</sup> Quarter: Truck Technology Fundamentals**

- a. Tools for heavy duty applications
- b. Diesel vehicle introduction and identification
- c. Job seeking skills
- d. Diesel fuel systems
- e. Induction systems and turbos
- f. Air Brakes
- g. Vehicle inspections

**Second year students will also complete:**

- a. Introduction to engine brake and vehicle retarders
- b. Basic Antilock Brakes

**4<sup>th</sup> Quarter: Vehicle Systems**

- a. Clutch system
- b. Introduction to manual transmission
- c. Driveshaft components
- d. Introduction to differential
- e. Wheels and Tires

**Second year students will also complete:**

- a. Shop maintenance unit
- b. College visit and report

**D. Textbook &/or supplemental material:**

1. Fundamentals of Medium/Heavy Duty Diesel Engines, CDX
  2. Fundamentals of Medium/Heavy Duty Commercial Vehicle Systems, CDX
- With accompanying work books and related videos

**I. Outcomes**

**A. Students who have and A or B and good attendance (policy will be discussed in class) can earn college credits at:**

1. St. Paul College
2. Dunwoody College of Technology
3. Dakota County Technical College
4. Hennepin Technical College
5. Scholarship, Universal Technical Institute

**B. Certifications:**

1. 1<sup>st</sup> semester: ASE A1 Engine repair certification
2. 2<sup>nd</sup> semester students prepare in areas from ASE T2 Diesel Engines, T3 Drive Train, T4 brakes and T5 Suspension and Steering
3. SP/2 Safety Certification

## **Student Expectations**

### **A. Attendance:**

Students follow their home school calendar and are expected to attend all scheduled classes and labs on those days. If you need to arrive late or leave early, please bring a note from your home school stating the nature of your exception and dates required. This note will need to be taken to the CTC office before coming to class. There is a form for extended absence due to a planned vacation that should be filled out prior to vacation.

### **B. Grading and Evaluation Criteria:**

#### *Content Distribution:*

Classroom and Shop time is split approximately 50% in each area. Units typically are split 35% written, 35% shop project and 30% test evaluation. Students are also graded on Professionalism on a weekly or monthly basis. As the year progresses the professionalism expectation grows as does its impact on the overall grade.

#### *Grade Distribution:*

A = 90%+      B = 80% - 89%      C = 70% - 79%      D = 60% - 69%  
F = 0-59%

### **C. Special Accommodations:**

Students will be accommodated as necessary. Students are expected to communicate their individual needs to the instructor.

## **Instructor Notes:**

1. Students are expected to follow SCANS skills which are posted in the classroom, and adhere to rules and policies in the classroom and student handbook.

2. Progress reports will be sent home upon request. Midterm reports will be mailed for students who are either failing or not making adequate progress.

3. Email is the preferred way to contact me. [dkelsey@916schools.org](mailto:dkelsey@916schools.org)

4. Colleges have the final say about awarding college credits. Students must have good attendance not missing more than 5 days in a grading period or having ongoing tardiness (or other issues like leaving class early, etc.) in addition to having an A or B to earn credit(s).

5. Students who demonstrate unsafe behavior or not following the rules for the class can be removed from the shop.