

# BELLINGHAM TECHNICAL COLLEGE

## DIESEL EQUIPMENT TECHNOLOGY

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**COURSE NUMBER:** DET 204

**COURSE TITLE:** Air Brakes

**CREDIT HOURS:** 5 CR

**COURSE DESCRIPTION:** This course will address the basic operation of mobile braking systems, with the emphasis on preventive maintenance and logical troubleshooting.

**OUTCOME:** Systematically repair and maintain various brake systems and logically troubleshoot problems within those systems.

**OUTLINE:**

1. Brake Types
2. Maintenance and Safety
3. FMVSS No. 121 Compliance Tests
4. Parking and Emergency Brakes
5. Air System Valve Servicing
6. ABS Systems

**STUDENT PERFORMANCE OBJECTIVES:**

*Given, reference materials, tools of the trade and following industry approved safety procedures the student will:*

1. Re-Line brakes to 100% accuracy and 1.5 times flat rate time
2. identify major system components with
3. troubleshoot systems to 1.5 times flat rate time
4. read and evaluate schematics with
5. identify different types of hose, pipe, tube, and fittings

**METHOD OF INSTRUCTION:**

1. demonstration
2. Team Based Learning
3. discussion
4. interactive software
5. lecture
6. field trips and audio/visual

*Provide opportunity for disadvantaged or disabled students by providing alternate modes of learning.*

## **STUDENT ASSIGNMENTS/REQUIREMENTS:**

*The following must be completed before a grade can be given:*

1. 90% class attendance required
2. Completion of assigned competencies and tasks required
3. Completion of self evaluation forms required

## **Clickers:**

You will use a small, hand-held transmitter ("clicker"), much like a remote, to answer practice questions in class. The clicker is your responsibility. Specifically:

- You must first register your clicker in order to receive credit for using in class. (Even if you registered your clicker last semester, you must register it again this semester.)
- If you forget to bring your clicker to class, you are out of luck. I will have no spare clickers, and I will not allow students to share clickers.
- If the battery in your clicker dies, you must replace it. The battery should last for a couple of years or more, but it is recommended that you change the battery each year, or carry a spare one with you.
- If you lose or damage your clicker, you must buy a new one.
- If you have your clicker replaced or buy a new one, you must register it again, and let me know so that I can keep track of it.
- You can miss one clicker class per semester with an excused absence and your grade will be prorated.

## **EVALUATION AND GRADING:**

1. Assigned competencies, tasks, quizzes are required. The class teams will select grading criteria the first day of class
2. Completion of quarterly self evaluation **required** by the last class day of each month. The self evaluation grade weight will be set by each class.
3. You have 2 free days for attendance. Absence of more than 2 days will lower your grade by one letter. 2 tardy instances count for one day absence.
4. Letter grades:

0 - 61 = F      63 - 72 = D      73 - 82 = C      83 - 92 = B      93 - 100 = A

## **REQUIRED STUDENT SUPPLIES AND MATERIALS:**

REQUIRED TEXT: HEAVY DUTY TRUCK SYSTEMS

*4<sup>th</sup> Edition      DELMAR*

## **ADDITIONAL INSTRUCTIONAL RESOURCES:**

1. CONCRETE CONSTRUCTION      trade magazine
2. CRANE WORKS      trade magazine
3. CONSTRUCTION EQUIPMENT      trade magazine
4. DIESEL PROGRESS      trade magazine
5. HYDRAULICS AND PNEUMATICS      trade magazine