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| **COURSE INFORMATION** |

**MA50 – EQUIPMENT TECHNICIAN**

**Fall 2017 – Code: 57725**

**Heavy Duty Brake Systems**

**Lab M, W 3:00-5:50 AGM Room 5**

**Lecture M, W 6:00-6:50 AGM Shop**

**Juan Rodriguez Office Hours:** Monday & Wednesday

Office: AGM 5 1:30pm – 3:00pm

Office #: 559-638-0300, Ext. 3428

E-mail: juan.rodriguez@reedleycollege.edu

**Course Description 4** Units 2 lecture and 4 lab hours per week

Braking systems on today's heavy duty trucks are very complex. This course provides instruction in hydraulic and air brake systems. Theory and operation as well as components and their functions will be covered. Students completing this course will be eligible to take the ASE certification test in the Medium-Heavy Truck Certification Brake area (T4).

Basic Skills Advisors: Eligibility for ENGL 125, ENGL 126, and MATH 101

Subject Prerequisites/Advisories: None

**Required Text:**

1. TBA
2. On-Line Modules – Various manufactures

**Student Learning Outcomes**

**Upon completion of this course student will be able to:**

* *Inspect Heavy Duty Truck braking systems for safety and reliability*
* *Service and Repair Heavy Duty Truck braking systems.*

**Objectives**

1. Inspect air supply and service systems
2. Inspect mechanical brake system
3. Inspect hydraulic brake systems
4. Inspect power assist brake systems
5. Inspect air and hydraulic antilock brake systems (ABS) and automatic traction control systems (ATC)
6. Service and repair air supply and service systems
7. Service and repair mechanical brake systems
8. Service and repair parking brake systems
9. Service and repair hydraulic brake systems
10. Service and repair power assist brake systems
11. Service and repair air and hydraulic antilock brake (ABS) as well as automatic traction control (ATC) systems

**Course Outline**

A. Introduction to Brakes

B. Wheel Bearings and Seals

C. Antilock Brake Systems

D. Hydraulic Foundation Drum Brakes

E. Hydraulic Foundation Disc Brakes

F. Hydraulic System

G. Power Assisted Units and Related Components

H. Air Foundation Brakes

I. Air Supply System

J. Air Service Circuits

K. Special Circuits

L. Trailer Air Brake Systems

**Brakes Labs**

Lab 1: Air Brakes – Air Supply and Service Systems

Lab 2: Air Brakes – Mechanical/Foundation

Lab 3: Air Brakes – Parking Brakes

Lab 4: Hydraulic Brakes – Hydraulic System

Lab 5: Hydraulic Brakes – Hydraulic System

Lab 6: Hydraulic Brakes – Power Assist Units

Lab 7: Wheel Bearings – Inspect and Replace

**Required Materials**

* Approved eye protection/safety glasses with **clear** lenses (Z87.1 A.N.S.I.)
* Approved foot wear – **Work Boots with non-slip soles**
* Calculator
* One work shirts (approximately $30)

TKO Apparel

1776 11th St.

Reedley, CA

859-6074

**Attendance**

Lecture: Attendance is required and roll will be taken at each class meeting. There is no difference between an “excused” or “unexcused” absence. A “tardy” is considered an absence unless the student contacts the instructor at the end of class to change the status from absent to tardy. Two tardies will count as an absence. Any student who misses more than two weeks of class meetings within the first 9 weeks of class may be dropped from the class by the instructor (i.e., class meets two times per week, 4 absences; class meets 1 time per week, 2 absences).

Lab: **Attendance in all labs is mandatory.** Students must make prior arrangements with the instructor to be excused from lab. At that time, the instructor will determine what, if any, make-up work will be appropriate.

Quizzes: There will be no make-ups for quizzes.

Tests: Make-up tests are limited to students who have made arrangements with the instructor prior to the required testing period or those students who have been excused by the Reedley College Dean of Admissions, Veronica Jury.

On-Line Training: Students are required to complete on-line training modules in addition to regular lecture and lab work. Failure to complete modules in a timely manner will seriously affect your final grade.

Time Clock: All students are required to punch in and out of shop class on a daily basis. Failure to do so will result in an absence. Students are expected to only punch their own cards and cannot, under any circumstances, punch another student’s card. Misuse of the time clock system can result in removal from the class.

**Grading Policy/Scales/Evaluation Criteria**

For maximum point consideration, all written assignments and term reports should be typed and double-spaced. Lecture assignments (homework) will be accepted late up to the test for that unit of the course; however, late assignments will be penalized 1/3 of the possible points. Late laboratory assignments turned in within one week of the required due date will be accepted with a penalty equal to 1/3 of the maximum points. Any lab assignment turned in after that time up to the last regular class meeting will be accepted with a 50% penalty.

Point Distribution: 90% = A, 80% = B, 70% = C, 60% = D, 59% & less = F

Assignments & Grades: Assignments/Quizzes 40%

Midterms/Finals 10%

Lab Assignments 25%

Lab Participation 25%

**Cheating & Plagiarism**

In keeping with the philosophy that students are entitled to the best education available, and in compliance with Board Policy 5410, each student is expected to exert an entirely honest effort toward attaining an education. Violations of this policy will result in disqualification for the course.

**Accommodations for Students with Disabilities**

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact the instructor as soon as possible.

**Work Ethic -** Most students are enrolled in college classes to obtain a quality job or to enhance their skills for advancement with their current employment situation. Employers look for a punctual, responsible individual who is prepared to go to work. Our goal is to replicate the workplace environment where a student can develop and demonstrate these desirable traits.

* Punctual: It is customary to arrive at least 5 minutes before work begins. Individuals will be terminated if they are not punctual.
* Responsible: It is expected than an employee work every scheduled work day. Individuals will be terminated if they are not responsible.
* Prepared: It is expected that an employee be prepared with he/she arrives for work. Students must have work shirts, safety glasses, and appropriate footwear to participate in the laboratory. If a student is not prepared, he/she cannot participate and will receive a zero (see “responsible”).
* Professional Appearance: Shirts are to be clean and tucked in at all times. Long pants, work shirts and work boots are required daily. **Failure to adhere to this policy will result in dismissal for the day.**

**Language -** English is expected to be spoken in class for the following reasons:

* All course content and materials are presented in English and class discussions all take place in English.
* All lab activities are conducted in groups and must have effective communication between all group members.
* Shop activities can be hazardous and it is vital that instructors receive feedback in English to ensure safe practices.
* This policy is designed so that instructors and all students may communicate in a common language.
* All individuals must have freedom of expression and are allowed and encouraged to communicate in the language of their choice outside of class times, including breaks.
* Appropriate language is expected at all times. Many people find cussing and vulgar language offensive so please be aware of your language when on campus or whenever representing the college.

**Behavioral Standards**

* Each student is responsible for his/her own work. Written assignments are not group assignments and no credit will be awarded for students who turn in the same work. Students suspected of cheating on tests and quizzes will receive no credit for that particular assignment and may be removed from the class.
* Turn **off** cell phones when in the classroom or shop. **Texting** is not allowed in class.
* Reedley College is a **Tobacco Free Campus**! No tobacco products of **any** form are allowed while on campus. This includes “E-Cigarettes”
* Sleeping is **not** allowed in class. If you cannot stay awake you should go home and get some sleep, or try going to bed at an earlier hour.
* This class is set for the semester. All doctor’s appointments, interviews, meetings with counselor, and other types of appointments should be scheduled during your time outside of class.

**Important Dates**

* Last day to drop and qualify for a refund August 25
* Labor Day September 4
* Last Day to drop a class and not receive a letter grade September 15
* Veterans Day                      November 10
* Thanksgiving November 23 & 24
* Finals Week December 11 – 15

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| **FINAL EXAM:**  **Wednesday, December 13th @ 3pm**    **\*Final Exam is mandatory. Failure to participate will result in a non-passing grade** |

**Mechanized Agriculture Program Standards**

The following standards are designed to help ensure that any students wishing to enroll in one or more MAG classes are well prepared for a rigorous course of study. This preparation consists of the following:

* Have strong HS grades, preferably a 2.5 GPA or above. The program is very technical in nature and there are considerable reading and writing requirements.
* Take an aptitude test and perform at or above a basic level. This test consists of mechanical reasoning, reading for comprehension and information, and computations. It is an indicator of both your ability and aptitude in this field of study.
* Have a mechanical background. This could be in the form of work experience, previous shop classes or hobbies that involve mechanics. If you have never worked on equipment or machines, or even your own vehicles, this may not be the program for you.
* Possess a strong willingness to learn and grow. A strong work ethic is essential to succeed in this program.
* Have a clean driving record, pass a drug test, and be employable.
* Students unable to enter a cohort for any of the above reasons may still sign up for a single, stand-alone MAG course.
* Students who enroll in a cohort and perform poorly should be counseled into single courses where there is a greater likelihood of success.

**Daily Program Expectations for All Students**

* Be willing and able to be in class every day. You will be required to punch a time clock in this program on a daily basis. This is job training. Three hours of lab and one hour of lecture is a job!
* Be an active learner – one who is prepared for class each day by bringing along required text materials, takes notes in class, and regularly prepares for lessons.
* Purchase or acquire the required textbook materials, online modules, uniforms and safety equipment for the program. Must be acquired by the end of the second week.
* Complete the required on-line instructional modules in a timely manner. These training materials reinforce what is taught in the classroom and shop. Students who take the on-line modules seriously consistently perform at the top of the class.

***I have read the above standards and program expectations and agree to do my best to meet them.***

Name (printed) Signature Date