Course Objective

Prerequisite: AUMT 1307 or concurrent enrollment in AUMT 1307. Operation and repair of drum/disc type brake systems. Emphasis on safe use of modern equipment. Topics include brake theory, diagnosis, and repair of power, manual, anti-lock brake systems, and parking brakes. May be taught manufacturer specific. Laboratory fee.
(3 C/ 2 lect, 1 lab, 0 other)

Course Focus

This course includes a substantial amount of hands-on learning activities, which cannot be rescheduled. Regular attendance is mandatory for successful completion of the course.

Text and References

Automotive Technology, Principles, Diagnostics, and Service
James D. Halderman/Chase D. Mitchell Jr. 5th Edition
Automotive Laboratory Exercises: David McNabb
Selected Manufacturer Specific Materials/Publications
Selected Internet and Online Resources

Course Goals

The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives.

1. explain asbestos safety issues
2. define friction
3. calculate coefficient of friction
4. explain hydraulic fundamentals
5. calculate hydraulic pressures/forces
6. identify common brake system components
7. describe different hydraulic brake system designs
8. explain brake fluid rating system
9. explain master cylinder operation
10. describe different master cylinder designs
11. disassemble master cylinder
12. assemble master cylinder
13. explain metering valve operation
14. explain proportioning valve operation
15. explain brake warning lamp operation
16. describe different disc brake designs
17. explain disc brake operation
18. describe different drum brake designs
19. explain drum brake operation
20. describe different brake power assist systems
21. locate necessary service manual information
22. apply necessary service manual information
23. perform brake system inspection
24. inspect brake pedal travel
25. measure brake rotor thickness
26. measure brake drum diameter
27. explain common brake system diagnostic procedures
28. list improper brake pedal travel causes
29. list brake pull causes
30. list brake noise/vibration causes
31. list improper brake power assist causes
32. perform power brake function test
33. perform air entrapment test
34. perform master cylinder by-pass test
35. perform master cylinder compensator port test
36. rebuild disc brake caliper
37. replace disc brake pads
38. machine brake rotor
39. machine brake drum
40. replace drum brake shoes
41. rebuild drum brake wheel cylinder
42. bleed brake hydraulic system
43. adjust parking brake
44. explain rear anti-lock brake system operation
45. explain four-wheel anti-lock brake system operation
46. explain anti-lock brake system diagnostic process
47. perform anti-lock brake system self-test
48. troubleshoot anti-lock brake system

Student Learning Outcomes:

**AUMT1310 Automotive Brake Systems**

- Identify and explain the operation of standard brake system components
- Inspect automotive brake systems and recommend necessary service
- Service automotive disc brake systems in accordance with industry guidelines
- Service automotive drum brake systems in accordance with industry guidelines
- Troubleshoot and service automotive brake system concerns in accordance with industry guidelines

Online Assignment:

Register for online assignment(s) at: [www.todaysclass.com](http://www.todaysclass.com) (only if you don’t already have a login id)

**Instructor id: zkajeu843h**

**Note:** After you register, I will assign your assignments. The sooner you register, the sooner you begin! Write down your login information! You may work this assignment from any computer with internet access. You can work it here at the college if you don’t have a computer with web access.

Final Grade is composed of:

- 40% - Participation
- 25% - Quizzes and Multimedia Assignment (*Note: I will not allow you attend class without successful completion of your web-based assignments by the due date. I will deduct 20 points per day late. You must pass the final with a 70% or higher. I will record your 1st attempt as your grade. I will reset you one time. After that I will reset the entire course.*)
- 35% - Final Exam
Final grade will be of letter type:
A = 90 to 100 points
B = 80 to 89 points
C = 70 to 79 points
F = Below 70 points

Note that the drop date for this course is 12-11-15

Syllabus Notes:

Instructor retains the sole right to change or modify this syllabus as class needs become apparent. Instructor will notify students prior to changes in the syllabus (Course grading methodology will not change). NOTE: Notification of change in the syllabus (if any) will be verbal and it is your responsibility to be here to hear about it.

Grading Policy: Each day you will earn a total of 5 points for class participation toward your total course grade (up to a maximum of 40 points). You must be here to earn any points. If you are absent, you earn no points. If you don’t return from lunch, you forfeit all points for that day. If you do not arrive until after lunch, you forfeit all points for that day. If you are late to class, you lose 1 point. For each 3 instances where you are late, you lose 5 points. If you are asked to leave the class due to failure to comply with my requests, you lose all points for the day. If you leave early without my permission, you lose all points for that day. Class participation involves more than sleeping in class. You must follow my instructions at all times or lose points. Generally speaking, there are no excused absences. If you are not here, you are not participating and cannot earn points. This class has a required number of contact hours for successful completion. Note that more than 2 absences will result in failure of the course. ½ day absences count as full day absences. I will administer pop quizzes at any point during the class. THERE IS NO MAKEUP FOR POP QUizzes!! I generally do not allow for any extra-credit assignments. You need to successfully complete the regular assignments. You must stay “on station” at all times when in the shop environment. If you need to leave your work station, let me know. Any violation of this policy will result in a loss of points from your class participation score. Ringing cell phones and texting are a problem and will result in a loss of points on your class participation grade. DO NOT MAKE OR RECEIVE PHONE CALLS or TEXT DURING CLASS OR WHILE IN THE SHOP ENVIRONMENT. Use 972-860-4189 or 972-860-4180 (shop) for an emergency contact number for those that may need to get in touch with you in case of an emergency. Smoke in the parking lot only.

Any missed test or quiz (except pop quizzes—see above) must be made up within two class periods or a zero (0) will be entered for the missed test or quiz score.

It is a requirement that you bring the following with you each class:

1. Tools, safety glasses.
2. Textbook.
3. Pens or pencils, and something to take notes with.
4. Calculators are welcome and will be handy at times.
Receiving Your Final Semester Grades:

End-of-semester grades will not be mailed to you by the college.

INTERNET ACCESS TO GRADES

Go to the Dallas County Community College District website (http://www.dcccd.edu).
1. Click on eConnect, then select ‘Current Credit Student Menu’
2. Under the heading ‘My eConnect Account’, select Log In.
3. Enter your seven-digit student ID number (not your Social Security number.)
4. Enter your password or, if this is your first time to use the system, enter your date of birth.
5. Under the heading ‘My Personal Information’, select Check My Grades.
6. Select the term and grade type that you wish to review, then click on ‘Submit’

Americans with Disabilities Policy Statement - If you feel you may need an academic adjustment (such as help with taking notes, etc.) because of any type of physical disability or learning difference, please talk with your instructor during office hours or by appointment before the end of the first week of classes. You may also contact Disability Services at (972) 860-4673 room S136 for advisement and counseling. bhcADAservices@dcccd.edu

Notification Of Absence Due To Religious Holy Day(s) - Absences for observance of a religious holy day are excused if you inform your instructor at the beginning of the course. A student whose absence is excused to observe a religious holy day is allowed to contract with the instructor to take a make-up examination or complete an assignment within a reasonable time after the absence.

Financial Aid Statement

Students who are receiving any form of financial aid should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate after the drop date are also subject to this policy.

Drop Policy - If you do not wish to complete this course, you are responsible for withdrawing yourself from the class. If you are unable to complete this course you must withdraw from it by May 8th, 2015. Withdrawing from this course is a formal procedure which you must initiate. The instructor or instructional associate cannot do it for you. You may do this in admissions or counseling. If you stop attending and do not withdraw you will receive a performance grade, usually an “F”. Students sometimes drop courses when help is available that would enable them to continue. If you feel the need to withdraw, please discuss your plans with the instructor or instructional associate.

STOP BEFORE YOU DROP

For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop.

You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions.

Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a “W”. Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, you may access: http://www.dcccd.edu/Why/Reg/Registration/Pages/DropWithdraw.aspx
Repeating a Course-Effective for Fall Semester 2005, the Dallas County Community Colleges will charge additional tuition to students registering the third or subsequent time for a course. All third and subsequent attempts of the majority of credit and Continuing Education/Workforce Training courses will result in additional tuition to be charged. Developmental Studies and some other courses will not be charged a higher tuition rate. Third attempts include courses taken at any of the Dallas County Community Colleges since the Fall 2002 Semester. See Third Attempt to Enroll in a Course at http://www.dcccd.edu/pc/cost/3rdcrseattmpt/Pages/default.aspx

Academic dishonesty-Academic dishonesty is a violation of the Code of Student Conduct. Academic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion. As a college student, you are considered a responsible adult. Your enrollment indicates acceptance of the DCCCD Code of Student Conduct: https://www1.dcccd.edu/catalog/ss/code.cfm