AUMT 2313
MANUAL DRIVE TRAIN AND AXLES
3 SEMESTER HOURS 96 CONTACT HOURS

COURSE DESCRIPTION

Prerequisite: AUMT 1305 or concurrent enrollment in AUMT 1305. A study of automotive clutches, clutch operation devices, standard transmissions, transaxles, and differentials with emphasis on the diagnosis and repair of transmissions and drive lines. Maybe taught manufacturer specific.

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 Laboratory Exercises: Shane Baxter
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. (* designates a CRITICAL goal)

1. define torque
2. calculate gear ratios
3. identify drivetrain components
4. explain clutch operation
5. explain clutch actuator operation
6. explain shift linkage operation
7. explain synchronizer operation
8. explain transmission powerflow
9. explain differential powerflow
10. explain transaxle powerflow
11. locate necessary service manual information*
12. apply necessary service manual information*
13. inspect clutch actuator
14. explain clutch diagnostic procedures
15. measure crankshaft endplay
16. measure flywheel runout
17. replace clutch assembly*
18. inspect shift linkage
19. explain transmission diagnostic procedure
20. disassemble transmission*
21. inspect transmission components
22. assemble transmission*
23. explain transaxle diagnostic procedures
24. disassemble transaxle*
25. inspect transaxle components
26. assemble transaxle*
27. explain driveline diagnostic procedures
28. measure driveline angles*
29. measure driveshaft runout*
30. measure companion flange runout*
31. explain differential diagnostic procedures
32. disassemble differential
33. inspect differential components
34. adjust differential pinion depth*
35. adjust differential pinion preload*
36. adjust differential ring gear backlash*
37. adjust differential side bearing preload*
38. assemble differential*
39. measure axle flange runout
40. measure axle shaft endplay
41. explain transfer case operation

STUDENT LEARNING OUTCOMES

- Identify and explain the operation of clutch, manual transmission and drive axle components
- Troubleshoot and service clutch concerns in accordance with industry guidelines
- Troubleshoot and service manual transmission and transaxle concerns in accordance with industry guidelines
- Troubleshoot and service drive axle concerns in accordance with industry guidelines

STUDENT CONTRIBUTIONS

Each student will spend at least 15 hours per week preparing for class. Attendance is critical in this class.
COURSE EVALUATION

33.3 % - Lab Grade
33.3% - Quiz Grade
33.4% - Final Exam

Final grade will be of the letter type:
A = 90 to 100 points
B = 80 to 89 points
C = 70 to 79 points
F = Below 70 points
I = Incomplete

COURSE SCHEDULE

Drivetrain Operation
Drivetrain components
Clutch systems
Transmissions
Drivelines
Differentials
Transaxles

Clutch Assemblies
Clutch diagnosis
Clutch service

Transmissions and Transaxles
Transmission diagnosis
Transmission service
Transaxle diagnosis
Transaxle service

Drivelines and Differentials
Driveline diagnosis
Driveline service
Differential diagnosis
Differential service

Four Wheel Drive Systems
Transfer case operation
Locking wheel hub assemblies
GRADING POLICY

LAB GRADE

- The lab average, which consists of 33.3% of your grade, is comprised of your progress everyday in class.

- Your attitude
- Your ability to get along with others (Treating others with respect)
- Your attire
- Your productivity with the days workstations
- Your ability to stay quiet when the instructor is talking or performing a demo
- Cussing is not allowed in class!

NOTE: You start every day with 100 points; as long as there are no problems with the items listed above you will end the day with 100 points for a daily lab grade.

NOTE: If any of the problems listed above occurs, then points will be subtracted from the 100 points that day. The amount of the points subtracted will be up to the sole discretion of the instructor. If the you have more point deductions than the 100 points for that day, then the points left over from that day of deductions will be subtracted from the next day.

- Since our classes lasts five and one half hours every day, missing one of our classes is like missing five regular college classes. Therefore anyone missing three days of an automotive course will fail the course no matter how good your quiz average and final test grades are. (There are exceptions to every rule for instance a family member-getting ill or passing away, but you must call the instructor to let him know the situation.)

- Fighting will result in all the students involved in the altercation being sent home for two days. After the two day cool off period a meeting will be arranged with the instructor and the dean to decide weather the student will be allowed back into the ASSET program or put on a one-year suspension. (This includes fighting anywhere on campus property)

- Racism or racial comments ARE NOT TOLLORATED!!!!!!!

QUIZ GRADE

- The quiz average, which consists of 33.3% of your grade, is comprised of adding all the quizzes taken by the student during the course and dividing it by the number of quizzes given during the course. (This may include written quizzes, oral quizzes, hands-on quizzes, CBTs, and web based items.)

NOTE: If you are late for a quiz, that is you are not in your seat when the instructor hands out the quiz, then you will take a zero for that quiz. (Unless you have an excused tardy or absence that has been prerranged by the student with the instructor.)
**FINAL TEST**

- The final test, which consists of 33.4% of your grade, is comprised of the final test of the course that may include a written or practical or both.

**NOTE:** If you are late for the final test, that is not in your seat when the final test is handed out, then you will be able to take the test when you return, but fifteen points will be subtracted from your test for the tardiness.

**NOTE:** If you are absent for the final test you may not be able to make up the final test, therefore you will take a zero for the final test. The zero will be averaged in with your quiz average and lab average. (If you have an excused absence, then you will be able to take the final exam on a later date. An excused absence is one that the instructor has been told about by the student.)

**YOU CANNOT PASS THIS CLASS IF:**

- You do not complete all required web-based courses.
- You do not complete all required computer based courses.
- You are absent for three or more days.

**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 for advisement and counseling.

**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 June 25, 2014. 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

For more information on Brookhaven College policy please refer to the following link:
http://www.brookhavencollege.edu/employees/faculty/Documents/BCSyllabus_Addendum.pdf