AUMT 2321
Automotive Lighting and Accessories
Advanced Electrical

Course description: Prerequisite: AUMT 1307. Repair of automotive electrical subsystems, lighting, instrumentation, and accessories. There will be an emphasis on accurate diagnosis and proper repair methods using various troubleshooting skills and techniques. This class may be taught manufacturer specific.

Course focus: This course includes a substantial amount of hands-on learning activities, which cannot be rescheduled. Regular attendance and timely arrival are mandatory for successful completion of this course.

Attendance and Arrivals: An “Absence” consists of being either absent for the day or late to class greater than 30 minutes after the scheduled start time. A Late arrival consists of arriving to class no greater than 29 minutes after the scheduled start time. A total of three (3) absences will result in a failing grade for the course.

Tools and Equipment: Each student is required to have access to a complete set of tools as described in the Brookhaven College Ford Asset Tool list or Comprehensive Automotive Tool list. If during a laboratory assignment a group or individual does not access to the required tools; that group or individual will not be able to participate in any laboratory exercise. Groups are made in an attempt to optimize tool usage within that group. It is advised that no one is allowed to borrow tools from outside their group.

Cell phones and Texting: We all lead important lives where we cannot be out of touch for FIVE hours a day. But, in this program we must. We take brakes throughout the course of a day and this provides the student time to text or talk. Please refrain from texting during class (lecture/lab). The widely used stealth method of “under the table” is highly detectable by the highly trained instructors.

Laptops: Laptops are welcome in class for class related work such as note taking; web based training (not during lecture), and service information.

Laboratory: The laboratory environment is created and controlled by rules that each and every student must follow. If you do not abide by the rules you will not receive credit for any of the activities (labs, exams, quizzes, etc.) for that day. The instructor and laboratory coordinator monitors your laboratory behavior, performance, and participation. Below is a list of a few infractions that if you are observed participating in will cause you to lose credit for the day.
- In the shop without safety glasses.
- Horseplay in the shop.
- Working without service information.
- Sleeping in the shop or vehicles.
- Harassing a fellow student.
- Throwing objects in the shop.

Above is an attempt to quantify poor student behavior. It is in no way a replacement for common sense and I hope we can all exercise common sense.
Texts and References:
Automotive laboratory exercises.
Selected Manufacturer specific Materials/Publications
Selected internet and online resources
www.bhcasset.com

Course Goals:
The following is a list of goals which will be addressed in the course. These goals are directly related to the performance objectives. (Each and every goal is crucial.)

1. define electricity
2. define voltage
3. define amperage
4. define resistance
5. explain Ohm's law
6. explain Kirchoff's Law
7. demonstrate digital meter operation
8. measure voltage
9. measure current flow
10. measure resistance
11. explain series circuit operation
12. explain parallel circuit operation
13. explain series/parallel circuit operation
14. explain common electrical circuit failures
15. explain electrical diagnostic procedures
16. interpret electrical wiring diagrams
17. locate necessary service manual information
18. apply necessary service manual information
19. diagnose open electrical circuits
20. diagnose shorted electrical circuits
21. diagnose selected lighting and accessory circuits
22. explain diode operation
23. assemble diode controlled circuit
24. explain transistor operation
25. assemble a transistor controlled circuit
26. demonstrate oscillator operation
27. interpret oscilloscope patterns
28. explain automotive module/computer operation
29. measure module/computer input signals
30. measure module/computer output signals
31. check module/computer operation
32. interpret module/computer input signals
33. interpret module/computer output signals
34. explain electronic vehicle accessory system operation
35. explain electronic vehicle information system operation
36. explain electronic vehicle safety system operation
37. explain network operation
38. identify and explain types of network systems
39. troubleshoot electronic vehicle safety systems
40. demonstrate scan tool operation
41. diagnose selected computer controlled systems
Student Contributions:
The student will spend a considerable amount of time preparing for class. Class preparation will include but is not limited to:

- Web Based Training
- Web based research
- Text book study

Attendance and timely arrival are very critical in this class. Attention and participation is also critical in this class.

Evaluation:
Final grade is composed of:

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<tr>
<th>Percentage</th>
<th>Component</th>
<th>Final Grade will be of letter type:</th>
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<tr>
<td>25%</td>
<td>Attendance and Participation</td>
<td>A = 100 to 90 points</td>
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<td>25%</td>
<td>Lab Grades</td>
<td>B = 89 to 80 points</td>
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<td>25%</td>
<td>Quizzes and Outside coursework. (WBT and/or textbook)</td>
<td>C = 79 to 70 points</td>
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<td>25%</td>
<td>Final Exam (written and/or practical)</td>
<td>F = 69 to 0(zero) points</td>
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Ford ASSET:
These web-based courses will affect your final grade and they are required for course completion through the Ford ASSET program. The assigned WBT courses are due before the administration of the embedded Ford Post Test's. If you do not complete the WBT courses by the scheduled Post Test you will be required to take the test at another date with deductions in the final score.

Web Base Training:

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<th>Course #</th>
<th>Description</th>
<th>Due date</th>
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Safety concerns and rules: This course requires very close attention to safety.

- We may be handling heavy, sharp, and awkward components; so it is extremely important to wear only closed toed shoes, “steel toed” if possible. (No sandals or similar shoes.) If you come to class with improper foot wear you will be sent home and will receive no credit for the day or any of the activities scheduled.
- Z-87 eye protection WILL be worn at all times. (CLEAR LENSES ONLY)
- We will be working with vehicle electrical and electronic systems, some systems may operate at 130Vdc (lethal) be sure what the system you are servicing is capable of.
- We will be servicing A/C systems which are capable of producing pressures above 400psi. At these pressures the glycol based oil is flammable. Be extremely cautious when working with charged systems.
- We will be working with various refrigerants, all of which pose a potential risk to the atmosphere. Proper procedures must be adhered to when reclaiming, evacuating, and charging with these refrigerants. If you do not adhere to the proper procedures you risk your grade in doing so.
- We will be using many specialized tools and adapters you must ensure that the tools are properly. Using the service manuals or tool instructions will help to ensure correct tool usage. If you are not sure please ask the instructor. If you find a tool to be damaged please inform your instructor and the tool room attendant on staff.
Student Learning Outcomes:

- Identify and explain the operation of automotive electrical/electronic system components
- Properly utilize common electrical diagnostic equipment on automotive electrical/electronic systems
- Analyze and understand the operation of automotive electrical/electronic circuits
- Troubleshoot and service automotive electrical/electronic system concerns in accordance with industry guidelines

Additional College/District Policies

Receiving Your Final Semester Grades:
The college will not mail end-of-semester grades to you.

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 February 11 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/3rdcrseatmtmpt/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