Syllabus

AUMT 1407/1007

Automotive Electrical Systems

Automotive Technology

BRAZOSPORT COLLEGE

LAKE JACKSON TEXAS

PREPARED BY: Rick Underdahl, INSTRUCTOR — DATE: September 2015

RECOMMENDED BY: _____, DIVISION CHAIRMAN — DATE: _____

APPROVED BY: _____, DEAN — DATE: _____

BRAZOSPORT COLLEGE
500 COLLEGE DRIVE
LAKE JACKSON, TEXAS 77566

AUMT1407

AUTOMOTIVE ELECTRICAL SYSTEMS

COURSE DESCRIPTION

An overview of automotive electrical systems including topics in operational theory, testing, diagnosis, and repair of batteries, charging and starting systems, and electrical accessories. Emphasis on electrical schematic diagrams and service manuals. May be taught manufacturer specific. (2-4)

COURSE FOCUS

System diagnosis

TEXT AND REFERENCES

Automotive Technology Curriculum

Author(s): CDX Automotive

- ISBN-13: 9781284027327

Details:

- Online Course pages © 2015
  Access Code Subscription Length: 365 Days

Required course materials are available at the Brazosport College bookstore, on campus or online at http://www.brazosport.edu/bookstore. A student of this institution is not under any obligation to purchase a textbook from the college bookstore. The same textbook is/may also be available from an independent retailer, including an online retailer.

COURSE GOALS

The following list of course goals will be addressed in the course. These goals are directly related to the performance objectives (Addendum A). (*designates a CRUCIAL goal)

1. Use wiring diagrams to determine needed electrical circuit repairs.
2. Check continuity in electrical circuits using a test light; determine needed repairs.
3. Check applied voltages and voltage drops in electrical circuits using analog and digital voltmeters; determine needed repairs.
4. Check applied voltages in electrical circuits using an oscilloscope; determine needed repairs.
5. Check current flow in electrical circuits and components using an ammeter; determine needed repairs.
6. Check continuity and resistance's in electrical circuits and components using analog and digital ohmmeters; determine needed repairs.
7. Check electrical circuits using jumper wires, determine needed repairs.
8. Find shorts, grounds, opens, and high resistance problems in electrical circuits; determine needed repairs.
9. Diagnose the cause(s) of abnormal battery drain; determine needed repairs.
10. Inspect, test, and replace fusible links, circuit breakers, and fuses.
11. Perform battery state-of-charge test; determine needed service.
12. Perform battery capacity (load, high-rate discharge) test; determine needed service.
13. Perform battery 3 minute charge test; determine needed service.
14. Inspect, clean, and fill battery.
15. Replace and reinstall battery.
16. Perform slow/fast battery charge.
17. Inspect, clean, and repair or replace battery cables, connectors, and clamps.
18. Jump start a vehicle using jumper cables and a booster battery or auxiliary power supply.
19. Test starting systems
20. Test charging systems

STUDENT CONTRIBUTIONS

Students are expected to attend regularly scheduled classes. They should complete all reading and outside class assignments prior to the scheduled meetings. The student will assist in demonstrations, complete assignments and tests demonstrating appropriate knowledge and skills in the specific areas designated. Students will be asked to complete an Instructor/Course Evaluation at the end of the course.

COURSE EVALUATION

A = 100 - 90
B = 89 - 80
C = 79 - 70
D = 69 - 60
F = 59 and below

COURSE SCHEDULE

The class meets for 2 lecture hours and 4 lab hours per week.

ADDENDUM A

PERFORMANCE OBJECTIVES

1. Given a task assignment sheet, the student will be allowed references to diagnosis a general electrical system. Content goals 1 - 10 should serve as a reference. Performance will be satisfactory if the student follows established class room procedures in performing the diagnosis's and locates the system failure in the designated assignment allotted time.

2. The student will be allowed references. Content goals 11 - 18 will serve as a procedural guide. The student will diagnosis and service a battery installation. Performance will be satisfactory if the battery is tested, removed, cleaned, serviced and installed following the established class procedures.

3. The student will be allowed references. Content goals 1 -10, and 19 will serve as a reference. Performance will be satisfactory if the student follows established classroom procedures in performing the diagnosis and locates the system failure in the designated assignment allotted time.

4. The student will be allowed references. Content goals 1 -10, and 20 will serve as a reference. Performance will be satisfactory if the student follows established classroom procedures in performing the diagnosis and locates the system failure in the designated assignment allotted time.

STUDENTS WITH DISABILITIES

Brazosport College is committed to providing equal education opportunities to every student. Brazosport College offers services for individuals with special needs and capabilities including counseling, tutoring, equipment, and software to assist students with special needs. Please contact the Special Populations Counselor, 979.230.3236, for further information.

ACADEMIC HONESTY

Brazosport College assumes that students eligible to perform on the college level are familiar with the ordinary rules governing proper conduct including academic honesty. The principle of academic honesty is that all work presented by you is yours alone. Academic dishonesty including, but not limited to, cheating, plagiarism, and collusion shall be treated appropriately. Please refer to the Brazosport College Student Guide for more information. This is available online at http://www.brazosport.edu. Click on the CATALOGS AND SCHEDULES link under STUDENTS.

Academic dishonesty violates both the policies of this course and the Student Code of Conduct. In this class, any occurrence of academic dishonesty will be referred to the Dean of Student Services for prompt adjudication, and will, at a minimum, result in an automatic zero for the assignment. Sanctions may be imposed beyond your grade in this course by the Dean of Student Services.