AUTO 56 Course Outline as of Fall 2005

CATALOG INFORMATION

Dept and Nbr: AUTO 56 Title: AUTO ELECTRIC SYS
Full Title: Automotive Electrical System
Last Reviewed: 5/12/2008

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	3.00	17.5	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	6.00		Contact Total	105.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00 Total Student Learning Hours: 210.00

Title 5 Category:	AA Degree Applicable
Grading:	Grade Only
Repeatability:	39 - Total 2 Times
Also Listed As:	
Formerly:	

Catalog Description:
Fundamentals of automotive electrical and electronic systems including service and repair of starting, charging, and other chassis electrical systems. Introduction to computer controlled systems.

Prerequisites/Corequisites:

Recommended Preparation:
H.S. Auto or Auto 350 (formerly AUTO 50) & AUTO 350L (formerly AUTO 50L).

Limits on Enrollment:

Schedule of Classes Information:
Description: Fundamentals of automotive electrical and electronic systems including service and repair of starting, charging, and other chassis electrical components. Introduction to computer controlled systems. (Grade Only)
Prerequisites/Corequisites:
Recommended: H.S. Auto or Auto 350 (formerly AUTO 50) & AUTO 350L (formerly AUTO 50L).

Limits on Enrollment:
Transfer Credit: CSU;
Repeatability: Total 2 Times

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**			Effective:	Inactive:
CSU GE:	**Transfer Area**			Effective:	Inactive:
IGETC:	**Transfer Area**			Effective:	Inactive:
CSU Transfer:	Transferable	Effective:	Spring 1989	Inactive:	Spring 2016
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:
Students successfully completing this course should be able to explain the operation of, perform diagnosis, and repair of automotive electrical systems. The student should be able to pass the A.S.E. Auto Electrical System Certification Exam, the B.A.R. Lamp Adjuster Exam, and enter the automotive trade as an apprentice level technician specializing in automotive electrical systems.

Topics and Scope:

A. Fundamentals of D.C., Automotive Circuits
  1. Principles of:
    a. voltage
    b. amperage
    c. resistance
    d. solid state electronics
B. Battery Operation and Service
  1. Capacity test
  2. Three minute charge test
C. Starting System Operatin and Service
  1. Motor Operation
  2. System Operation
    a. control circuits
    b. motor circuits
  3. System Testing
    a. current draw test
    b. isolated resistance checks
D. Charging System Operation and Service
  1. Alternator Operation

2. Generator Operation
3. Regulator Circuits
4. System Testing
   a. out put tests
   b. full fielding
   c. circuit checks

E. Accessory System Operation and Repair
1. Lighting and Signal Circuits
2. Windshiled Wiper and Washer Circuits
3. Instruments and Warning Light Circuits
4. Cruise Control Systems
5. Power Outside Mirrors
6. Power Seats

Assignment:

Students will be required to keep a notebook of all class assignments and class notes. In the laboratory, students will be evaluated on their ability to follow industry approved diagnostic and repair procedures in a reasonable amount of time based on flat rate timetables. Students will complete work orders, diagnostic sheets, parts orders, and time sheets in a neat and readable manner.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.	Writing 0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Exams	Problem solving 5 - 10%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Componet identification	Skill Demonstrations 30 - 40%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice	Exams 35 - 45%

Other: Includes any assessment tools that do not logically fit into the above categories.

Attendence	Other Category 10 - 15%

Representative Textbooks and Materials:
Diagnosis and Troubleshooting of Automotive Electrical, Electronic, and Computer Systems, James D. Halderman, Prentice Hall, 2nd Ed 1997.