COURSE SYLLABUS

1. TITLE OF COURSE: **BASIC AUTOMOTIVE ELECTRICITY**

PREFIX/NUMBER: ASE 120 **CREDIT HOURS:** 2-15 CR. (2-15L/1.5-22.5 LBV)

2. PREREQUISITE: None

3. RESOURCES NEEDED:

TEXT:

SUPPLIES: Automotive DVOM and uniform shirts

4. COURSE DESCRIPTION: Introduces automotive electricity and includes basic electrical theory, circuit designs, and wiring methods. Focuses on multi-meter usage and wiring diagrams.

5. COURSE GOAL:

6. COURSE OBJECTIVES:

By the end of the course, students will:

(A) Use wiring diagrams during diagnosis of electrical circuit problems. Check electrical circuits with a test light; determine necessary action.

(B) Check voltage and voltage drop in electrical/electronic circuits using a digital multi-meter (DMM); determine necessary action.

(C) Check current flow in electrical/electronic circuits and components using an ammeter; determine necessary action.

(D) Check continuity and resistances in electrical/electronic circuits and components with an ohmmeter; determine necessary action. Check electrical circuits using jumper wires; determine necessary action.

(E) Locate shorts, grounds, opens, and resistance problems in electrical/electronic circuits; determine necessary action.

(F) Measure and diagnose the cause(s) of abnormal key-off battery drain; determine necessary action.

(G) Inspect and test fusible links, circuit breakers, and fuses; determine necessary action.

(H) Inspect and test switches, connectors, relays, and wires of electrical/electronic circuits; perform necessary action.

(I) Repair wiring harness and connectors.

(J) Perform solder repair of electrical wiring.

7. EVALUATION PROCEDURES:

(A) There will be a written exam after each unit and a final, during the 7½ week term, during class time, and on announced dates. All will be weighted equally, except the final will count double.

(B) There may be unannounced "pop" quizzes throughout the 7½ week term, which will also be weighted equally to other exams.

(C) Routine evaluations will be made on an individual basis by the instructor during each lab session.

(D) There will be a lab final (performance) exam. The score on this exam will be entered twice (doubled) when computing your final grade.

(E) Grading will be weighted--30% of your grade for written assignments, 40% of your grade for lab assignments, 30% of your grade for tests. One grade point value will be deducted from total grade percentage for each hour absent.

Grading Scale

Raw Score Range	**Letter Grade**
90 to 100	A
80 to 89	B
70 to 79	C
60 to 69	D
0 to 59	F

Written Assignments 30%	**Lab Assignments 40%**	**Tests 30%**	**Attendance**
50/50 50/38 50/50	50/38 50/50 50/38	100/90 100/70 100/90	One point will be deducted from total grade % for each hour absent
150/138	150/126	300/250	

Special Remarks:

1. All announced examinations will be made up of multiple choice, completion and short essay type questions and will be given during regular class periods. Make-up exams will only be given if prior arrangements have been made.

2. Attendance: College policy states that students may be dropped from enrollment when absent 20% of the scheduled class meetings. If enrolled from the beginning of the term, 15 hours will usually constitute 20% of a four-credit semester course which meets five hours per week. Reinstatement procedures are described in the PCC catalog.

3. Tardy Policy: A student who is late three times (enters classroom after the instructor has taken roll) will be charged with one full absence unless the student can provide valid reasons for one or more of these tardies.

4. Assignments/Missed Exams: It is the student's responsibility, whether present or absent, to obtain all material presented and to complete all course assignments. If prior arrangements are made or extenuating circumstances exist, makeup of tests

may be allowed. Late homework papers will not be accepted unless those same extenuating circumstances exist. Makeup of quizzes is to be at the instructor's discretion.

8. COURSE OUTLINE

I. Electrical Flow and Theories

II. Definitions of Electricity

(A) Voltage

(B) Amperage

(C) Resistance

(D) Voltage Drop

III. Ohm's Law

IV. Types of Electrical Circuits

(A) Series

(B) Parallel

(C) Series-Parallel

V. Multi-meter Operation and Usage

VI. Auto Wiring and Basic Circuits

VII. Wire and Connector Repair

VIII. Wiring Diagrams

IX. Testing for Circuit Defects

(A) Opens

(B) Shorts

(C) Voltage Drop

(D) Amperage

(E) Resistance

9. METHODS OF INSTRUCTION:

To be successful in this course, students are expected to participate in discussions, readings, in-class writing, and peer review activities. The instructor may assign point values to such activities.

10. ACADEMIC INTEGRITY:

The very nature of higher education requires that students adhere to accepted standards of academic integrity. Therefore, Pueblo Community College has adopted a policy of academic conduct as described in the Student Handbook. Violation of academic integrity may be defined to include the following: cheating, plagiarism, falsification and fabrication, abuse of academic materials, complicity in academic dishonesty, and personal misrepresentation. It is the student’s responsibility to be aware of the behaviors that constitute academic dishonesty. Sanctions for violating the standards of academic integrity may include warning, probation, suspension, and/or failure of the course or assignment at the discretion of the instructor.

11. ADA NOTICE:

Students who have a documented disability may be eligible to receive accommodations for this class. Please contact the Disability Resources Center at 549-3446 for further information.