Course No: I 700

Orange Unified School District

AUTO I

Year Course

GRADE LEVEL: 10-12

PREREQUISITES: None

INTRODUCTION TO THE SUBJECT:
Auto I introduces students to the fundamentals of automotive repair and diagnosis. Students learn effective use of tools and the importance of shop safety. The course starts with the "under the hood" components in the first semester followed by the "under the car" focus second semester. Students will observe demonstrations and participate in lab activities. Students are introduced to modern diagnostic equipment and basic auto electronics.

COURSE OBJECTIVES:

BY THE END OF THE COURSE THE STUDENT WILL BE ABLE TO:

Apply basic procedures and techniques related to automotive repair.

Demonstrate the safe and proper use of automotive tools and equipment, including modern diagnostic test equipment.

Understand the basic theory and operation of the automotive engine and its "under the hood" components, plus the "under the car" components of brakes, transmission, and suspension.

Utilize diagnostic equipment and basic troubleshooting skills.

Make intelligent purchases of automotive products and services.

COURSE OVERVIEW AND APPROXIMATE TIME ALLOTMENTS:

FIRST SEMESTER		**WEEKS**
I.	Automotive Hand Tools and Safety	3
	A. Tool names and their proper uses	
	B. Safety instruction and procedure	
	C. Use and descriptions of mechanical fasteners	
	D. Shop tour and demonstration of equipment	

WEEKS

II. Basic Engine Type — 1
- A. Overhead cam
- B. Overhead valve
- C. Diesel
- D. Two stroke

III. Engine Systems — 7
- A. Cooling systems
- B. Ignition systems
- C. Electrical systems, including charging and starting
  - 1. How a battery works
  - 2. Basic electrical theory
- D. Basic auto electronics – computer and sensor function
- E. Fuel system
  - 1. Fuel injection basics
  - 2. Carburetors

IV. Demonstrations and Lab Time — 7
- A. Oil change
- B. Lubrication
- C. Cooling system inspection
- D. Battery testing

18 Weeks

SECOND SEMESTER

I. Transmission — 4
- A. Manual transmission, including clutch function
- B. Automotive transmission operation
- C. Drive line
- D. Differential rear axle assembly
- E. Front wheel drive – transaxle

II. Brakes — 5
- A. Basic hydraulic principles
- B. Brake system components
  - 1. Drum brakes
  - 2. Disc brakes
  - 3. Master cylinder
  - 4. ABS electronic brake control
- C. Service and repair of brakes
- D.

		WEEKS
III.	Front End Components	4
	A. Steering and related components	
	B. Suspension	
	C. Alignment	
	D. Tires	
	1. Construction of tires	
	2. Tire maintenance	
IV.	Air Conditioning and Heating	3
	A. Air conditioning system components	
	B. Heating system components	
	C. Vacuum system	
V.	Labs and Projects	2
		18 Weeks

DATE OF CONTENT REVISION: June 2003

DATE OF BOARD APPROVAL: November 20, 2003