

Name of School:

Name of Course: **Basic Auto Mechanics**

Instructor Information

Name:
E-mail address:
School phone number:
Web page address:
Best times to be reached:

Course Description

This is an introductory course dealing with the importance, construction, and operating principals of the modern automobile. Operating systems such as brakes, electrical, and basic engine construction and operation will be covered in **both textbook (theory) and shop (practical) instruction.**

District Standards and Power Benchmarks

District Standards

Students will be able to:

1. Perform under-the-hood service.
2. Perform chassis inspections and repairs.
3. Integrate safety in all aspect of the automotive classroom and lab.

Power Benchmarks

Students will be able to:

1. Apply shop and equipment safety rules. Including hazardous material.
2. Determine the identification, use, and care of shop tools and equipment.
3. Service engine lubrication systems per manufacturer's specifications.
4. Demonstrate tire and wheel services.
5. Practice repair on brake assemblies.
6. Assess automotive belts and hoses.
7. Distinguish parts of the cooling system.
8. Incorporate basic electrical system theory.
9. Demonstrate ignition system fundamentals.
10. Disassemble and reassemble an automotive lower engine block.

Course Information

Basic Automotive is a 9 week course.
Elective Course
.5 credits
No prerequisites

Course Outline/Calendar

Shop, Tool, and Equipment Safety: 5 days plus, safety training throughout the course.

Tires: 5 Days

- A. Wear patterns.
- B. Sizing, air pressure, DOT.
- C. Tread-wear, traction, and temperature.
- D. Mount and dismounting tire. Include importance of cleaning rim to avoid bead leaks.
- E. Spin balancer.

LOF (lube, oil, filter): 10 Days

- A. API and SAE
- B. Oil change and lubrication of chassis.
- C. Inspection of all under hood fluids (antifreeze, power steering, transmission, windshield wiper solvent, and brake fluid).
- D. Inspection of belts, hoses, and air filter.
- E. Inspection of lights, turn signals, license plate lights, etc.
- F. VIN Numbers and All-Data.

Brakes: 5-7 Days

- A. Identification of brake system components.
- B. Inspection of brake system components (pads, shoes, rotors, drums, brake hoses, brake lines, calipers, wheel cylinders, master cylinder, etc).
- C. Replace front disc brake pads (either on a shop vehicle or stand set up) including inspecting, cleaning, and lubrication with silicone brake grease.
- D. Pascal's Law.

Electrical: 3-4 Days

- A. Ohm's Law. Continuity and DVOM.
- B. Battery information, servicing, and cleaning.
- C. Safest method of jump starting.

Minor Tune-up: 3-4 Days

- A. Inspection and replacement of spark plugs and spark plug gapping.
- B. Under hood inspection/replacement of spark plug wires, air filter, and PCV valve.
- C. Introduction to Emissions system.
- D. Demonstrate use of Scanner.

Cooling System: 3-4 Days

- A. Identify cooling system components and description of how they work in a vehicle.
- B. Use a hydrometer to check specific gravity of coolant strength.
- C. Use a multi-meter to test voltage in coolant.

Engine: Lower Engine Block: 5 days

- A. Discussion of 4 stroke engine theory.
- B. Identification and function of lower engine block parts.
- C. Precision measurement of lower engine block components with a micrometer.
- D. Disassemble and reassemble of the lower engine block.

Text/Other Required Materials/Resources

ALL students will be required to provide safety glasses (Z-87 approved) with clear lens and side shields. A three ring binder may be required to file all class work as a working study guide. Students also are recommended to bring old clothes for lab work. (old blue jeans, sweat pants, tennis shoes, and or cover-alls) Students will be required to reimburse the department for tools that are missing or damaged through abuse. Students and parents/guardians will be required to read, sign, and return a signed parental form.

Instructional Procedures & Support

Basic automotive students can learn in a variety of settings. Lecture, demonstration, cooperative learning, chapter review questions, worksheets, and hands on lab work all are some of the methods of instruction. All basic automotive students are expected to come to class everyday and on time. ALL assignments are to be turned in completed on time. ALL make-up will follow student handbook. Make-up work is the student's responsibility.

Classroom Management Procedures

Basic automotive students can learn in a variety of settings. Lecture, demonstration, cooperative learning, chapter review questions, worksheets, and hands on lab work all are some of the methods of instruction. All basic automotive students are expected to come to class everyday and on time. ALL assignments are to be turned in completed on time. ALL make-up will follow student handbook. Make-up work is the student's responsibility. Students are expected to come prepared for class with the appropriate class materials. Student's will respect the rights of each individual, no ridicule, name calling, etc will be allowed. The District harassment policy will be enforced.

Assessment Plan

Grades will be given for: daily performance/participation, quizzes, exams, projects and binder.

Grading System

A	93 and above	Firm command of knowledge domain
A-	90 – 92	High level of skill development Exceptional preparation for later learning
B+	87 – 89	Command of knowledge beyond the basic concepts of knowledge
B	83 – 86	Advanced development of most skills
B-	80 – 82	Has prerequisites for later learning
C+	77 – 79	Command of the basic concepts of knowledge
C	73 - 76	Demonstrates ability to use basic skills
C-	70 – 72	Lacks a few prerequisites for later learning
D+	67 – 69	Lacks knowledge of some fundamental ideas
D	63 – 66	Some important skills not attained
D-	60 – 62	Deficient in many of the prerequisites for later learning
F	59 and below	Most of the basic concepts and principles not learned Most essential skills have not been demonstrated Lacks most prerequisites needed for later learning