

OHHS Career and Technology Education

BASIC AUTOMOTIVE MAINTENANCE SYLLABUS



Course Name: Automotive Ignition and Engines, CTO175

Prerequisite: Basic Automotive Maintenance

Length: One Trimester, 0.5 credits.

COURSE DESCRIPTION:

This course is designed to further understand gas and light duty diesel engine operation, diagnosing mechanical problems, computer controls, diagnosing and repairing ignition systems, air induction systems fuel systems, how to use computer diagnostics, and diagnosing and repairing emission control systems. Automotive Service Excellence (ASE) test prep: A1-Engine Repair; A8-Engine performance; and A9-Light Vehicle Diesel Engines.

COURSE RESOURCES:

- “Automotive Excellence” Volume 1 & 2 and “Mitchell’s On Demand.”

COURSE FEES: None

INSTRUCTIONAL UNITS:

- Discuss the employment possibilities available in the auto repair field.
- List and describe the steps needed to attain National Institute for Automotive Service Excellence (ASE) certification in the auto servicing field.
- Name and describe the eight repair areas and operating systems in a vehicle.
- Define the bore and stroke of an internal combustion engine.
- Describe the basic operation of a four-stroke cycle internal combustion engine.
- Define the terms for how engines are rated: torque, horsepower, displacement, and compression ratio.
- Name and identify the components of the lower-end assembly of an internal combustion engine.
- Explain the functions of the components of an internal combustion engine and how they work together to create power for a vehicle.
- Discuss the impact that lower-end assembly component composition and design has on engine performance and cost.
- Name and identify the components of the upper-end assembly of an internal combustion engine.
- Discuss the impact that upper-end assembly component composition and design has on engine performance and cost.
- Explain the importance of engine coolant systems.
- Learn how to diagnose and repair cooling system problems.
- Learn the methods used to diagnose and repair engine problems.
- Know the causes of engine noises.
- Know the tests used to determine engine condition.
- Learn the steps involved in performing compression tests and cylinder leakage tests.
- Learn how to remove an engine from a vehicle.

BASIC AUTOMOTIVE MAINTENANCE—2

- Learn how to reassemble an engine.
- Identify and explain the characteristics of automotive fuels.
- Describe the operation of computerized gasoline-engine ignition systems and their service.
- Discuss the operation of computerized gasoline-engine system sensors and their service.
- Explain the operation of gasoline-engine system fuel supply and return systems and their service.
- Describe the operation of computerized gasoline-engine emission control systems and their service.
- Discuss the operation of the OBD-II system and its service using electronic service tools, such as a scan tool.

MAJOR ASSESSMENTS:

- Safety Test
- Lab Projects

WEIGHTED CATEGORIES:

- 50% Projects (Tests and Projects)
- 25% Daily work/Homework
- 25% Professionalism

Tests and Projects:

- When in the shop, students are graded upon effort, and cleanliness of shop.
- Assignments and information
 - You must pass all safety test with a 80% within 2 weeks. Your first grade on the safety test will be your grade for the trimester. If you cannot pass the test, you will be confined to book work for the remainder of the grading period.
 - Assignments are student led and assessments will be graded individually.
 - Students will have access to the “Mitchell’s On Demand” website, and are expected to access the site to assist with troubleshooting and repairs.
 - Students will have access to the website at any time from any internet connected computer.
- Students are graded on team and individual projects.
 - Team projects are graded upon vehicle functionality and accuracy of repair.
 - Individual projects are graded upon planning, time management, and functionality of final product.

Daily/Homework:

- This will include in class activities, and group lab projects.

Rules, Policies, and Expectations:

- Respect is key; you respect me and my possessions, and I will do the same to you.
- Cell phones
 - CELL PHONES ARE NOT ALLOWED IN THE SHOP
 - When seen, student will be asked to put away in the classroom
 - If seen more than once, student will be asked to surrender phone
 - If student refuses to cooperate, appropriate administrative action will be taken.
- Tardies
 - First tardy is a warning, second will result in detention
 - Multiple tardies will result in appropriate administrative action
- Students are expected to dress in appropriate professional school attire
 - Must wear protective clothing to abide by safety practices
- Bathrooms; each student will be allowed 5 trips to the bathroom per semester.
- Students are given participation points when in lab.

BASIC AUTOMOTIVE MAINTENANCE—3

- Students are expected to work the entire period, and are expected to help clean up at the end to earn full participation points per day.
- Swearing will not be tolerated; this is a professional atmosphere. If a student is heard swearing, appropriate consequences will be taken.
- Disobedience, laziness, and disregard for safety will not be tolerated. Students will be given one warning. If the undesirable action continues, student will be removed from the classroom and have a talk with the teacher. Depending on severity of infraction, other appropriate disciplinary actions may be taken.
- NO STUDENT WILL BE ALLOWED TO LEAVE THE CLASSROOM OR SHOP UNTIL SAID AREA IS CLEAN TO MY EXPECTATIONS.

Professionalism:

- You will earn 10 points a day for coming to class and working in a professional and productive manner. You will earn
 - Be Here – need to be in the Work Preparation class
 - Be On time – School Policies followed. Student need to be in the classroom when the last bell stops ringing. See General Rules and Expectations for other discipline due to tardiness)
 - Be Prepared– book, assignment, calculator, pen and/or pencil, computer & program(s) username(s) and password(s)
 - Be On Task - working during period, conversations are on topic, phone is put away
 - Be Respectful – listen during instruction, use positive comments when speaking with peers, avoid slang when “joking”, speak in low tones with neighbors or teacher only when working, keep desk and computers free of drawing and/or gum, keep questions and comments appropriate during classroom discussion.

GRADING SCALE: Points will be given and a grade based on your percentage of points on units and daily work and tests.

93% +	A	83-86.9%	B	73-76.9%	C	60-66.9%	D
90-92.9%	A-	80-82.9%	B-	70-72.9%	C-	59.9% and Below	F
87-89.9%	B+	77-79.9%	C+	67-69.9%	D+		

LATE WORK POLICY:

- All daily work is due two days after it is assigned, however, it can be turned in late for full credit until the unit test is given. After that, no credit will be given.
- Projects not turned in on time will be accepted for partial credit (75% of grade earned) up to 2 days after the original due date. (Exceptions will be made for Excused Absences)

RE-DO POLICY:

OHHS is an effort based school where we believe all students can learn. We also know that students learn at different rates. Thus, we are implementing a re-do policy that recognizes the needs of individual learners.

- 100% Re-do
 - Assessments (with exception of the Final semester exam)
 - Key Assignments: Evidence that demonstrates mastery of a standard
- Teachers may:
 - Require completion of supporting assignments prior to re-do opportunities for students to show they can meet the standard.
 - ***All assignments must be completed and corrected by the student prior to retaking an exam.***
 - Require students to complete re-do of work outside of class time.

BASIC AUTOMOTIVE MAINTENANCE—4

- *All re-do work/test retakes will be done during Tutoring/Extra Help times listed below.*
- Limit the number of re-do opportunities for each assignment.
 - *Students will have 1 re-do/retake opportunity for each test/project.*
- Assign zero grades when students choose not to do key assignments and/or assessments to standard.
- All opportunities for re-do work will come with a deadline as assigned by the teacher.
 - *Students will have 1 week from when the original Project/Test was scored and returned to the class to complete re-do work or to retake a test.*

PLAGIARISM POLICY (WAYS TO EARN A 0 ON ANY ASSIGNMENT):

OHHS PLAGIARISM POLICY:

- Any student, who knowingly turns in any work that has been done by someone other than himself or herself, and fraudulently represents it as his/her own, shall be considered to have cheated. Cheating also includes: aiding someone else in cheating, the use or preparation of written, pictorial, or other materials not authorized by the instructor during a test or assignment, the use of testing materials obtained previous to the test date, or plagiarism of any kind. Students found cheating will also be subject to an office referral, which could result in a suspension. As an effort based school, students who have plagiarized/cheated must still demonstrate their learning. Thus, students will be given the opportunity to complete the work. This will fall under the “Late Work Policy” of the teacher where total possible points may be reduced.

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