

# **Mission Valley ROP**

## **Automotive Technology 1/2 Syllabus 2021-2022**

Course Title: Automotive Technology 1/2

Course Code/Section #: TITA

Units of Credit: 10

Meeting Times: Monday thru Friday, 1/2 class period, 2 Semesters

Instructor Name: Mr. Nahale

Location/Room #: Washington High School-Automotive Shop Room #61

Office Hours: 8:00 AM thru 3:30 PM Monday thru Friday

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### **Introduction:**

This Automotive Technology course should be one of the most enjoyable experiences in your education. The course offers possibilities of furthering your knowledge of this fascinating piece of engineering development. Attainment of skills in the maintenance and repairs of the automobile, as well as a great amount of consumer information will also be your goals. You will develop skills useful for a career or hobby. Even more important, you will become a better driver and/or owner of today's automobile.

All tools and equipment are provided and maintained by the shop. All known supplies should be purchased before the beginning of the job. Some materials are available on a cost or replace basis.

A student is not required to have a car to be able to work in the Auto Shop. The shop is primarily for learning, not repairs. However, Auto Shop cannot be considered complete without hands-on experience. There will be some required objectives.

### **Course Description:**

The purpose of the Automotive Technology program is to help the student develop the skills and related technical knowledge of automotive services necessary to meet job entry requirements with a strong base for growth and continued education within the industry. Auto Tech I is an overview of the typical skills that make up the auto service industry. Students will gain knowledge and experience in such areas as: safety and preventive maintenance, engine principles and specifications, lubricating systems, cooling systems, fuel systems, electrical systems, emissions control systems, transmissions and drive lines, braking systems, suspension systems and job seeking skills.

### **Prerequisites:**

None

### **Course Objectives:**

General shop, tool and equipment safety

Proper usage of basic hand tools and specific special tools

Types and usage of fasteners

Basic automotive math

Basic automotive electricity

Reference materials and documentation usage

Understand the operation of the four stroke engine  
Understand the components of the powertrain system  
Understand the components and basic principles of the fuel system  
Understand the components and basic principles of the steering and suspension system  
Understand the components and basic principles of the brake system  
Understand the components and basic principles of the starting and ignition system  
Understand the basic maintenance and service intervals  
Understand Green and Hybrid Technology in today's vehicles  
Career development skills

### **Laboratory**

The program is to parallel industry closely. Since an evaluation of your work is necessary, points (rather than money) will be earned.

Each student must complete certain basic learning operations, as determined by the instructor, before (s)he can receive a passing grade. The student will know which jobs are required as each quarter begins.

Protective clothing (coveralls, shop coats, or other appropriate clothing), must be kept clean and in good repair. No open shoes or sandals, no shorts or tank tops. There are some lockers provided for storage.

Since the importance of quality craftsmanship is stressed, all work performed must meet conventional procedure and safety standards. For this reason, demonstrations and/or instructions will be given for each operation, whether individually or in a group, as the need arises.

### **Safety**

The Auto Shop has many hazardous situations. The student should attempt using the equipment only after receiving instructions from the instructor and PASSING the Safety Exam. The student must always be aware of any dangerous situations with respect for yourself, your classmates and equipment.

Each student must take and pass a safety test with a perfect score. In addition, there will be safety tests for specific equipment which must also be passed with a perfect score. Three failures to pass the safety exam as established may result in dismissal from the Auto Shop program. Any infraction of established safety rules may also result in dismissal.

Long hair must be tied back before entering the shop. Remove all jewelry before working in the shop. No earphones, no cell phones or other electronic devices are allowed in the shop or the classroom without instructor permission.

### **Clean Up**

At the close of the period, each student is responsible for a clean up assignment.

1. All work is to stop when told to (last 20 min of the class.)
2. The tools are to be cleaned and correctly put away.
3. The area where the student was working is to be cleaned.
4. The clean up assignment is to be completed.
5. When all shop duties are completed, the students will return to the classroom for dismissal

Students will not be dismissed unless the shop is secure, all tools are returned, and all students are quiet in their seats. Every quarter the clean up duties will change, permitting various responsibilities in the various areas of the shop. The shop foreman, (who is elected by the class), is to evaluate the cleanup performance.

### **Notebook**

Each student will keep a notebook. The notebook will be used for taking notes during study periods, and to keep handout material, returned tests, and homework.

Students must have their notebook and a writing instrument in their possession on 'shop days' before the beginning of the class or they will be considered unprepared.

### **Test Procedure**

The type of test given will be determined by the material to be evaluated. The graded, returned tests are to be put in the notebook in proper order. Questions generally concern current study units, but may cover any of the material previously studied.

Each week there may be a short quiz. Make up quizzes will not be given. Glossary, tool ID and computations are commonly given.

1. A writing instrument must be provided by the student.
2. Desks must be cleared of all material.
3. Talking is not permitted after receiving the test.
4. Questions about the test must be brought to the instructor (or proctor).
5. Any infractions of the above rules will result in a failure on the exam.

### **Reminder**

1. When instructions are given – **follow them!**
2. When instructions are not given or not understood – **ask the instructor for help.**
3. When you are to bring things to class (writing instrument, notebook, protective clothing, homework, things like that) – **bring them.**

### **Required Text, Material, Tools, and Resources:**

All course texts, handouts and tools will be provided by the instructor for use while enrolled in the course.

Halderman, James D. Automotive Technology Principle, Diagnosis, and Service, Fifth ed, Pearson Education, 2018

Industry developed handouts and materials

Instructor developed handouts and materials

It is expected that students come to class prepared each day and will need the following items:

Pen #2 pencil note paper issued safety glasses appropriate attire 3-ring binder

### **Teaching Modalities:**

Lecture Group Discussion Projects Reading Assignments  
Oral Questioning Multi-Media Hands-on Practice Demonstration Team  
Learning Simulations

**Grading:****Weight to be Given to Each Factor:**

Laboratory:

Hands on, Shop participation, Job Task, Attitude, Effort, Respect for others Being present every day and in gauging

70%

Examinations and Quizzes:

Group participation and discussion, written and oral reports, homework, and cleanup

30%

Attitude:

Effort, cooperation and dependability

100%

A = 100-90

B = 89-80

C = 79-70

D = 69-65

F = 64-below

The report card grades given at intervals are merely progress reports. You must successfully work from the first day to the last, to receive a satisfactory final grade.

The emphasis in this class will be to establish a wide variety of experiences and skills.

Averaging 2 points per workday will earn an "A" grade for the shop work. Since the shop work is worth ½ of the report card grade, major emphasis should be placed on shop work.

A day that zero points are earned results in less learned (and earned). Absences, tardies, and not being prepared for the day's activities will keep you from learning your share in the Auto Shop program.

**Weekly Assignment Schedule**

Course Schedule:

Students will be advised of the schedule of planned classroom topics, shop days, quizzes / tests, and homework assignments. This schedule should be used for informational purposes only and can be changed at any time.

**Late Work:**

Students returning from an excused absence are expected to turn in assignments on the first day of return to class; failure to do so will result in the assignment being scored as late. Late work will have the earned grade reduce by 1 grade level per day late

**Make-Up Work:**

Is available to students who have missed class / shop assignments due to an excused absence and are responsible for contacting the instructor to receive the materials or schedule time for shop work or test / quiz make-up.

**Attendance Policy:**

Mission Valley ROP's mission is to prepare students for employment, and career preparation via post-secondary educational opportunities. Just as in business and industry, where employees are expected to show up on time every day, Mission Valley ROP students are expected to be on time for classes every day. Toward that end I expect minimum absence and tardies. Within one quarter, three tardies will result in a referral sent to the office and a letter home, five tardies will have another referral with a conference with Administration, and six tardies will require your parents to attend a conference. **Six tardies in a quarter will result in the grade being lowered by one letter grade.** Cuts are absolutely unnecessary and will result in **one lowered grade for each cut.**

Two points will be awarded for each class period of positive attendance. If you are tardy one point will be earned. If you are absent, zero points will be earned.

When you return from an absence it is your responsibility to ask what I missed.

Students must arrive on time to class. Talking on a cell phone or having personal conversation outside the class is unproductive and will be considered a tardy. Tardiness reduces instructional time and is disruptive to the classroom. Tardies may prevent the student from receiving a course certificate.

Perfect attendance certificates will only be issued to students who have no absences or tardies. There are no exceptions.

### **Parking:**

All students will park in the student lot and will check with the instructor before pulling their car into the Auto Shop or yard.

### **Live Work:**

Mission Valley ROP requires a permission slip to be signed by the owner of the vehicle before a student begins work on an automobile. No exceptions.

### **Summary:**

**This class can be most enjoyable and rewarding. You will save yourself (and others) many dollars by more informed purchasing of supplies and labor, by performing preventive maintenance, and by doing your own repairs.** The automotive field offers many avenues of vocation, as well as, vocational pursuits. If you develop the necessary skills and desires, an automotive career can provide a good wage.

This school, and this shop in particular, is **yours**. Take care of it. Every dollar spent to replace stolen materials, to repair damage of vandalism, or to remove graffiti; means less equipment for your auto shop.

The instructor, the tools and equipment, the reference materials, and the facilities are here for you.

SET YOUR GOALS, AND WORK HARD TO ACHIEVE THEM. IT WILL ALWAYS BE WORTH YOUR EFFORTS.

### **Additional Policies and Procedures of the Classroom:**

Students are expected to adhere to all existing Washington High School policies while attending the Automotive Training Programs and to contribute to a safe and productive learning environment. Any students whose actions place themselves or other students at risk or negatively

impact the learning opportunities for others will face disciplinary actions and possible removal from the program.

All classes strive to prepare students for adult life by teaching skills and behaviors that will be valued in the workplace. The following expectations are stressed and graded in class:

- ❖ **Attendance:** Be here on time each day, prepared to work, dressed appropriately and in gauge in activities through out the class period.
- ❖ **Respect:** Use appropriate language, be honest and truthful, be respectful of peers and adults
- ❖ **Safety:** Follow safety rules and procedures, keep work area orderly
- ❖ **Responsibility:** Complete work on time, follow directions, use resources to answer questions, ask for help when needed, contribute to class discussion
- ❖ **Quality:** Show determination to complete tasks, be consistent in quality, focus on the task at hand
- ❖ **Team:** Work as a productive team member in a variety of roles, communicate in a sensitive way

Mission Valley ROP is committed to preparing students for the workforce. This preparation includes technical skills as well as business ethics. Mission Valley ROP does not condone cheating. Any student caught cheating on an exam or copying work from other students will be given one warning and a failing grade on that assignment. Any subsequent incident will result in termination from his/her Mission Valley ROP program, a failing grade, and loss of credits.

Students completing this course with a grade of “C” or better will receive a Mission Valley ROP Certificate of Completion listing competencies achieved in the course.”

**In-Class Events:** Visitors from industry, post secondary educational institutions and other areas related to course objectives may visit the class from time to time. Course related field trips may be planned and any associated costs would be notified in advance.

**INFORMATION  
AND  
PERMISSION LETTER**

I, \_\_\_\_\_ have read and understand the policies and procedures which include the grading and attendance policies and the safety rules for the Automotive Training Program and agree to abide by them.

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STUDENT SIGNATURE

DATE

Students will be given instruction and demonstration on the safe and proper use of all the tools, equipment and materials used in the small engine service technology training facility which are common to the automotive service industry along with safe procedures for working on vehicles in the shop. If you would like a list of the tools, equipment and materials used in the shop or a copy of the MSDS (Material Safety Data Sheet) for those materials, please let the instructor know. Students are expected to read, understand and follow all safety rules pertaining to operation and use of tools and equipment and proper handling and storage of any hazardous materials found in the shop such as lubricants, brake fluid, solvents, antifreeze, and oil soaked rags and absorbents. The purpose of this letter is to inform you about the policies and procedures for the operation of the shop. If you have any questions feel free to call the instructor (Mr. Nahale) at 510-505-7300 ext-67361.

As the parent or guardian of \_\_\_\_\_ I understand that he/she will be working with tools, equipment and materials that are common to the small engine service industry as well as completing live work on vehicles in the shop. I have read and understand the policies and procedures for the Automotive Training Program and grant permission for my son/daughter to participate in the class.

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PARENT OR GUARDIAN (Print name and sign)

DATE

**Emergency Contact Information**

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Name of emergency contact

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Emergency phone number

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Name of alternate emergency contact

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Alternate emergency phone number