

Waynesville Career Center
Automotive Service Technology
Course Syllabus
2020-2021

Course Title:	Automotive Service Technology	WCC Room: 114
Instructors:	Jason Jones – jasonjones@waynesville.k12.mo.us 400 GW Lane Waynesville MO. 65583 573-842-2500 - ext. 3906	
Credit Hours /Clock Hours:	1,080 hours total (Year 1 & 2)	
Office Hours:	7:00 a.m. – 8:00 a.m. or by appointment	
Prerequisites:	Year 1 – This class is intended for high school Juniors who have an interest in going into a career in the Automotive Service and Repair industry or related occupations. It is strongly recommended that students have good math skills, good reading skills, and good basic computer skills. Year 2 – This class is for high school Seniors who have completed Automotive Service Technology 1 with semester grades no lower than C- (70%).	
Statement of Purpose:	The Automotive Service Technology Program is designed to provide students with a basic understanding of the knowledge and skills needed to properly service and maintain today’s modern automobiles. The purpose is to provide students with the opportunity to develop the entry level skills, technical knowledge, and proper attitude needed for gainful employment in the field of automotive service and repair. Further, it is also the goal of the Automotive Service Technology Program to instill within each student the desire to continue the learning process so that the student will keep abreast of the high level of technological changes, which are at present occurring so rapidly, in the field of automotive service, maintenance and repair.	
Instructional Methods:	Program will consist of lecture/discussion, assigned reading of material, demonstration, guided practice, interactive computer-based training, and applied lab assignments. This instruction will be done both in-person and via virtual learning.	
Evaluation:	Students will be evaluated on written tests, computer-based training scores, lab assignments, notebook/workbook completion, daily participation in the class, and career readiness skills. Daily participation is necessary for successful completion of the course. A part of the program’s goals are to prepare the students for an entry-level career in the Automotive Industry. Just like a real job, attendance is an extremely important part of the student’s grade. The student’s final grade is calculated on a total point basis. All seniors (regardless of whether they are Year 1 or 2) are required to take a series of ASE Entry-Level certification tests. The score from these tests will be 10% of their last semester grade. Students passing these tests will receive an ASE Entry-Level Certification certificate. In addition, a written final will be given at the end of every semester. A = 90-100% B = 80-89% C = 70-79% D = 60-69% F = 0-59%	
	Grading will utilize a 50/40/10 scale: 50% Performance and Written Assessments 40% Projects / Activates / Assignments 10% Career Readiness Skills	

In an effort to increase and optimize the amount of class time spent in the shop/lab, students will be required to complete some assigned CDX Automotive online coursework as homework, if the assigned work isn't finished during class time.

Course Objectives/Areas of Study:

1. Introduction to Automotive Service Technology
 - a. Safety
 - b. Shop Operation
 - c. Components and Careers
2. Electrical Systems
 - a. General Electrical System Diagnosis
 - b. Battery Diagnosis and Service
 - c. Starting System Diagnosis and Repair
 - d. Charging System Diagnosis and Repair
 - e. Lighting System Diagnosis and Repair
 - f. Gauges and Electrical Accessories
3. Engine Performance
 - a. Ignition Systems
 - b. Fuel and Exhaust Systems
 - c. Emissions Control Systems
4. Engine Repair
 - a. General Engine Diagnosis-Remove and Replace
 - b. Cylinder Head and Valve Train Diagnosis and Repair
 - c. Short Block Diagnosis and Repair
 - d. Engine Completion and Start-up Procedure
 - e. Lubrication and Cooling System Diagnosis and Repair
5. Steering and Suspension Systems
 - a. Steering Systems
 - b. Diagnose and Repair Front Suspension Systems
 - c. Diagnose and Repair Rear Suspension Systems
 - d. Tire and Wheel Alignment Diagnosis and Repair
6. Brakes
 - a. Diagnose and Repair Hydraulic Systems
 - b. Diagnose and Repair Drum Brakes
 - c. Diagnose and Repair Disc Brakes
 - d. Diagnose and Repair Power Assist Brakes
7. Manual Drive Train and Axles
 - a. Clutch Diagnosis and Repair
 - b. Manual Transmission/Transaxle Diagnosis and Repair
 - c. Drive Shaft, CV-Joint and FWD Bearings, Diagnosis and Repair
 - d. Differential Diagnosis and Repair
 - e. Four-Wheel-Drive Diagnosis and Repair
8. Automatic Transmission and Transaxle
 - a. In-Car Transmission and Transaxle Diagnosis and Maintenance
 - b. Out-of-vehicle Transmission and Transaxle Repair
9. Heating and Air Conditioning
 - a. Air Conditioning
 - b. Heating Systems

Resources:

1. Textbook:

- a. *FUNDAMENTALS OF AUTOMOTIVE MAINTENANCE and LIGHT REPAIR*, by Kirk T. VanGelder
- b. *FUNDAMENTALS OF AUTOMOTIVE TECHNOLOGY*, by Kirk T. VanGelder

2. Materials:

- a. pen or pencil (student provided)
- b. lined notebook and/or notebook paper (student provided)
- c. 3-ring binder (school provided)

3. Computer-based training:

- a. CDX Automotive – *Fundamentals of Automotive Maintenance and Light Repair* online training system
- b. S/P2 Automotive Service Safety online training system

4. Required Personal Safety Gear:

- a. ANSI Z87.1 (or greater) rated safety glasses with **CLEAR** lenses (Clear means clear, not colored, tinted, mirrored, or shaded in any way. Instructor must be able to see the student's eyes from across the shop.) - 1st initial pair provided by WCC
- b. Shop appropriate clothing conforming to WCC dress code and Auto Service Tech Safety Rules (contact instructor or see WCC website for details)
- c. Shop appropriate footwear conforming to WCC dress code and Auto Service Tech Safety Rules (contact instructor or see WCC website for details)
- d. Mechanics gloves are permitted. Nitrile gloves can be provided upon request to protect sensitive skin.
- e. Face masks - Face masks will be worn in classrooms and shops if social distancing cannot take place. If students/staff are less than 6 feet apart a mask must be worn. Please see the Student Handbook for a more detailed explanation.

Special

Accommodations: If you need a special accommodation (regarding hearing, vision, physical ability, or academic assistance) please see your instructor before, after, or in-between classes to discuss the best course of action.

Missions & Visions: Waynesville R-VI Mission: *Empower and prepare individual students for future opportunities as citizens and leaders.*
Waynesville R-VI Vision: *Excel as a student-centered community of learners that embraces diversity and innovation.*
Waynesville Career Center Mission: *Waynesville Career Center provides a relevant learning environment using critical thinking, technology, and career skills to prepare students for success.*
Waynesville Career Center Vision: *Waynesville Career Center is committed to developing a diverse and skilled workforce of lifelong learners.*

Embedded Credit: Students completing the program will also have the opportunity to earn Communication Arts/English IV and Math IV Credits which are embedded into the program.

Awards and Recognitions:

- State of Missouri CTE Certificate
- Career Ready Diploma
- Outstanding Student Award – may be given to TWO students
- Perfect Attendance Awards

**** PLEASE SEE WCC STUDENT HANDBOOK FOR REQUIREMENTS FOR EACH CATEGORY ****

Student Expectations:

Any successful learning experience requires mutual respect on behalf of the students and the instructor. The instructor, as well as the fellow students, should not be subjected to any student's behavior that is in any way disruptive, rude, or challenging to the instructor's authority in the classroom. A student should not feel intimidated or demeaned by his/her instructor and students must remember that the instructor has primary responsibility for control over classroom behavior and maintenance of academic integrity. The instructor can order the temporary removal, or exclusion from the classroom, of any student engaged in disruptive conduct or conduct violating the general rules and regulations of the institution.

Disruptive behavior includes, but is not limited to the following: unauthorized cell phone use during class, leaving class early or coming to class habitually late, eating in class before or after break time, talking out of turn, doing assignments for other classes (unless approved by the instructor), sleeping, horseplay, and engaging in other activities that detract from the classroom learning experience.

The Automotive Service Technology shop is inherently a dangerous place. This is the primary reason for the safety rules that we have in place. For the welfare of everyone in the shop, safety rules **must** be followed **at all times**. Every student must successfully pass the Automotive Service Technology Safety Test, with a score of no less than 100%, before working in the shop. Any student found not following the shop safety rules, disregarding his or her own safety and/or the safety of others, or creating an unsafe learning environment for others may lose shop privileges and could also face severe disciplinary consequences. It is critical for all students to exercise good judgment, practice common sense, and be considerate to others in order for this class to be a prosperous experience for all those involved.

Because we do live work on real customer's vehicles in our shop, it is very important that all shop activities are taken very seriously. Whether or not procedures are correctly followed could potentially be the difference between life and death. For example: What might happen if wheel lug nuts are improperly torqued or left loose? What if steering linkage components are improperly installed or left loose? It's important to remember that these types of scenarios have the potential of affecting not only the customer's vehicle (or life), but any other person that they may share the road with. Although the instructors take every reasonable precaution to make sure that the student's work is done correctly, the instructors can't be with every single student as they tighten every single fastener on every job in the shop. Therefore, a certain amount of responsibility is expected of the student to take every job seriously and to notify the instructors whenever a problem arises. Accidents happen and mistakes will be made, but it is vitally important to notify the instructor immediately when a situation arises so that it can be corrected before the vehicle leaves our shop.

Academic Honesty – Cheating of any kind will not be tolerated in this class. Cheating is defined as turning in assignments that are not your own work or allowing others to do so. This includes copying answers to quizzes, turning in assignments that someone else has done, letting someone copy your answers, and letting someone else turn in your work as their own. If cheating is discovered, both parties will receive a zero on the assignment and referred to the office for additional disciplinary action. Parents will be notified.

Late and/or Missing Work Policy:

Make-up work (for excused absences) - Any assignment made prior to a student's excused absence is due on the day of their return to class. Missed tests will be made up within a week of the student's return during a time agreed upon with the teacher. Assignments given during an excused absence are usually due one class day for every class day of absence after the student's return. So a student missing three periods will have four class periods to submit make-up work (three periods plus the day of their initial return). Students who need more time should speak to the instructor as soon as they return from the absence.

Make-up work (for unexcused absences – ISS/OSS/SAVE) – In the event that a student is absent due to disciplinary issues, assignments may be given by the teacher in place of normal classroom work. These assignments are due to the teacher upon the student's return. Tests that are not taken and assignments that are not turned in because of unexcused absences will not be accepted any later than one day following the student's return. Students will receive a zero for those assignments and/or tests.

Late work - Students will lose 10 percent of the value of an assignment for each additional calendar day (excluding weekends) the work is late. For example an assignment that is due on a Monday that is turned in on Wednesday will be worth a maximum of 90 percent of the points possible, on Thursday that would fall to 80 percent, on Friday it would be worth a maximum of 70 percent. Work that is more than three calendar days late (excluding weekends) will not be accepted. Work or makeup tests will also not be accepted after a quarter or semester is completed. A quarter or semester is considered complete when the students have attended the final class of that grading period. A more detailed explanation of WCC's late work policy is available in the WCC Student Handbook.

The WCC student handbook can be found in its entirety here:

<https://www.waynesville.k12.mo.us/cms/lib/MO01910216/Centricity/Domain/1089/19-20%20WCC%20Student%20Handbook.pdf>

Restroom Policy:

Students will be allowed to use the restroom during class. Students are required to notify the instructor before leaving the class and are asked to keep trips to the restroom as brief as possible. In certain instances, the instructor may require the students to sign in & out on a sheet posted next to the hallway door. The instructor may also require the students to lock their cell phone in their locker before leaving class for a trip to the restroom.

Student Organizations:

SkillsUSA - All students in the Automotive Service Technology program have the opportunity, and are strongly encouraged, to join and participate in the SkillsUSA organization. Students belonging to SkillsUSA have the opportunity to compete in written and hands-on skill competitions with other Automotive Service Technology students in the local district, state, and national levels. Prizes for top finishers at the national level normally include thousands of dollars in Snap-on tools and toolboxes, tremendous scholarships to various automotive training colleges, and job offers from automotive organizations and companies.

SkillsUSA is a national membership association serving high school, college and middle school students who are preparing for careers in trade, technical and skilled service occupations, including health occupations, and for further education. SkillsUSA is a partnership of students, teachers and industry working together to ensure America has a skilled workforce. SkillsUSA helps each student excel.

Membership: More than 360,000 students and advisors join SkillsUSA each year, organized into more than 19,000 local chapters and 52 state and territorial associations. In 2016, 20,365 teachers served as professional members and SkillsUSA advisors. Combining alumni membership, the total number impacted annually is over 420,000. SkillsUSA has served more than 12.5 million members since its founding in 1965.

Mission: SkillsUSA empowers its members to become world-class workers, leaders and responsible American citizens. SkillsUSA improves the quality of our nation's future skilled workforce through the development of Framework skills that include personal, workplace and technical skills grounded in academics.

Vision: SkillsUSA produces the most highly skilled workforce in the world, providing every member the opportunity for career success.

Partners: More than 600 business, industry and labor organizations actively support SkillsUSA at the national level through financial aid, in-kind contributions, and involvement of their people in SkillsUSA activities. Many more work directly with state associations and local chapters. Commitment by industry to the annual national SkillsUSA Championships is valued at more than \$36 million.

Programs: SkillsUSA offers local, state and national opportunities for students to learn and practice personal, workplace and technical skills. These three components comprise the SkillsUSA Framework, a blueprint for career readiness. Local chapters conduct a full program of work and many students also attend a district or state conference. At the SkillsUSA Championships, more than 6,000 students compete in 100 occupational and leadership skill areas each June. These national technical competitions help establish industry standards for job skill training and entry-level workers. SkillsUSA is recognized by the U.S. Department of Education as a successful model of employer-driven youth development training.

The philosophy of the Championships is to reward students for excellence, to involve industry in directly evaluating student performance and to keep training relevant to employers' needs.

SkillsUSA yearly membership dues are \$20.00 and payable to Mr. Clutts in the WCC Library. If a student needs to make payments for their membership dues, arrangements can be made with Mr. Clutts. The deadline for membership dues is Oct. 31, 2018.

All paid members will receive a WCC SkillsUSA t-shirt, have the opportunity to participate in a field trip to Silver Dollar City, and have a vote in the election of chapter officers.

Read more about SkillsUSA at www.skillsusa.org

National Technical Honor Society – Automotive Service Technology students meeting certain grade and attendance requirements, as well as belonging to SkillsUSA and receiving instructor recommendation, may qualify to be inducted into the NTHS.

The National Technical Honor Society currently serves approximately 100,000 active members and nearly a million members since its inception in 1984. Awarding over \$1.7 million in scholarships to date, NTHS honors the achievements of top CTE students, provides scholarships to encourage the pursuit of higher education, and cultivates excellence in today's highly competitive, skilled workforce. For over 30 years, NTHS has been the acknowledged leader in the recognition of outstanding student achievement in career and technical education.

Read more about NTHS at <https://nths.org/>

General Conduct and Safety Rules

In addition to specific safety rules, procedures and instructions, which apply to a given operation or situation, the items listed below are in effect at all times

1. The Automotive Service Technology Shop is a safety glasses area. Safety glasses are to be worn at all times in the shop.
2. Appropriate work clothing will be worn while engaged in shop activities. Coveralls are recommended.
3. **LEATHER** work shoes will be worn while engaged in shop activities. Shoes must have leather tops and sides. **Absolutely NO sandals or open-toed shoes will be permitted in the shop.**
4. **Horseplay will not be tolerated.** The Automotive Shop is an inherently dangerous place and every precaution should be observed to maintain the safety of every person in the shop.
5. Students will work only on projects approved by the instructor prior to class.
6. Do not work alone in the shop or in the absence of the instructor.
7. Do not use any machine before receiving instruction on operation and safety.
8. Never use hands to attempt to stop moving machinery.
9. Remove rings, watches, and other jewelry when working in the shop.
10. Connect exhaust hose and turn on exhaust system fan when operating an engine.
11. Never get beneath an object that is being raised by a hoist or jack.
12. Never get beneath a vehicle that is supported solely by a jack.
13. Clean up **ALL** spills immediately.
14. Always use appropriate cleaning chemicals. Never use gasoline as a cleaning agent.
15. Never discharge compressed air at another person and never use compressed air to blow off clothing.
16. Use fender covers whenever working in the engine compartment. When the hood goes up, fender covers go on.
17. NO earbuds/headphones are allowed in the shop. For everyone's safety, the students must be able to clearly hear the instructor.
18. Any time a wheel is removed from a vehicle, the lug nuts/wheel fasteners will be torqued to factory specifications.
19. During normal class hours, students must notify the instructor before leaving the class for any reason.
20. Inappropriate cell phone usage has become a problem in our classes and in our industry. Students will lock cell phones and electronic devices in their lockers upon entering the class. ANY cell phone usage during class time **MUST** be approved by the instructor. Abuse of this privilege can result in phone confiscation and/or disciplinary consequences.
21. Face masks - Face masks will be worn in classrooms and shops if social distancing cannot take place. If students/staff are less than 6 feet apart a mask must be worn.

The attitude of "What I do is my business since I'm the one who will be hurt" is a very dangerous one and will not be tolerated. Every person must understand that every unsafe act can, and usually will, have adverse effects not only on the person committing the act but also on those around him/her. Blatant disregard for ANY of the safety rules in the Automotive Service Technology Program will

result in disciplinary action against the offending student, up to and possibly including permanent removal from the Automotive Service Technology Program.

SAFETY IN THE SHOP AFFECTS EVERYONE, AND WILL BE CONSIDERED A PRIORITY IN ALL THAT WE DO!

Waynesville Career Center Bell Schedule (Revised 7/7/2020)

WCC Block Classes Updated 7/7/20				
Monday	Tuesday	Wednesday	Thursday	Friday
2 nd – 4 th 8:45 – 11:15	2 nd – 4 th 8:45 – 11:15	2 nd – 4 th 8:45 – 11:15	2 nd – 4 th 8:45 – 11:15	2 nd – 4 th 8:45 – 11:15
Break 10:00 – 10:15	Break 10:00 – 10:15	Break 10:00 – 10:15	Break 10:00 – 10:15	Break 10:00 – 10:15
Lunch 11:15 – 11:39	Lunch 11:15 – 11:39	Lunch 11:15 – 11:39	Lunch 11:15 – 11:39	Lunch 11:15 – 11:39
5 th – 7 th SHS 11:50-2:32 WHS 11:49 – 2:32	5 th – 7 th SHS 11:50-2:32 WHS 12:13 – 2:32	5 th – 7 th SHS 11:50-2:32 WHS 12:04 – 2:32	5 th – 7 th SHS 11:50-2:32 WHS 12:13 – 2:32	5 th – 7 th SHS 11:50-2:32 WHS 11:49 – 2:32
Break 1:15 – 1:30	Break 1:15 – 1:30	Break 1:15 – 1:30	Break 1:15 – 1:30	Break 1:15 – 1:30
Hourly Classes				
Monday	Tuesday	Wednesday	Thursday	Friday
1 st 7:30 – 8:23	1 st 7:30 – 8:15	1 st 8:00 – 8:48	1 st 7:30 – 8:15	1 st 7:30 – 8:23
2 nd 8:34 – 9:21	2 nd 8:26 – 9:05	2 nd 8:59 – 9:41	2 nd 8:26 – 9:05	2 nd 8:34 – 9:21
3 rd 9:32 – 10:19	3 rd 9:16 – 9:55	3 rd 9:52 – 10:34	3 rd 9:16 – 9:55	3 rd 9:32 – 10:19
4 th 10:30 – 11:12	4 th 10:06 – 10:47	4 th 10:45 – 11:27	4 th 10:06 – 10:47	4 th 10:30 – 11:12
Lunch 11:15 – 11:39	Lunch 10:50 – 11:13	Lunch 11:30 – 11:54	Lunch 10:50 – 11:13	Lunch 11:15 – 11:39
5 th 11:49 – 12:36	Tiger Time 11:23 – 12:02	5 th 12:04 – 12:46	Tiger Time 11:23 – 12:02	5 th 11:49 – 12:36
6 th 12:47 – 1:34	5 th 12:13 – 12:52	6 th 12:57 – 1:39	5 th 12:13 – 12:52	6 th 12:47 – 1:34
7 th 1:45 – 2:32	6 th 1:03 – 1:42	7 th 1:50 – 2:32	6 th 1:03 – 1:42	7 th 1:45 – 2:32
	7 th 1:53 – 2:32		7 th 1:53 – 2:32	

WCC Staff Lunch – M, T, Th, F will be 11:15-11:39; W – 11:27-11:47

****Please return this entire 8-page document,
signed and dated, to the instructor.****

If at any time there are any questions, concerns, or comments please feel free to contact the instructor using the information on page #1.

~Additional syllabus copies may be obtained from the instructors upon request or are available for viewing on the Waynesville Career Center website: <https://www.waynesville.k12.mo.us/Page/4140>

By signing the section below, I have read and understand the Automotive Service Technology course syllabus and agree that the student listed below will follow all the safety rules presented to them, whether those rules be in written, posted, demonstrated, or verbal form.

Student's Name (please print) _____

Student Signature: _____ *Date:* _____

Parent's Name (please print) _____

Parent Signature: _____ *Date:* _____