



Syllabus

(2026 - 2027)

Western Montgomery Career and Technology Center
Automotive Technology (47.0604)

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Instructors: Mr. Bray & Mr. DuBose
Syllabus Operating Year: 2026 - 2027



Instructors

Level 1 & 3

Room: 130B

Instructor: Mr. DuBose

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Level 2 & 4

Room: 130A

Instructor: Mr. Bray

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Phone: (610) 489-7272 ext.118

Course Overview & Purpose

The Automotive Technology program at WMCTC provides students with the knowledge, skills, and attitudes necessary to begin preparing for a future in the automotive industry. Students will gain insight into the wide range of careers related to the automotive field, learn the technical skills required to succeed, and develop the professional habits expected in the workplace. By the end of this program, students will be able to envision themselves in an automotive career that aligns with their interests and strengths.

Course Objective

Following the Pennsylvania Program of Study, students will be prepared to pursue entry-level positions as apprentice technicians or continue their education at post-secondary training institutions.

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Reference & Learning Materials

- Handouts and classroom resources
- **Electude** – Training software
- **Google Workspace** – Productivity software
- **Kahoot** – Educational review activities
- **ShopKey Pro** – Automotive service information
- **Shop Pro** – Shop management software

Supplies (Required Daily)

Students are expected to come prepared each day. Failure to bring required supplies may result in a zero for the day.

- Proper PPE (Personal Protective Equipment)
- One pen, two pencils, highlighter, and colored pencils
- Reference materials as assigned
- Student ID badge
- Computer and charger



Objectives & Expectations

Student learning will focus on three key areas, aligned with grading:

1. Knowledge/Theory & Understanding (Cognitive – 30%)

Students will recall, explain, and apply concepts related to automotive systems and safety practices. This includes comprehension, information recall, and problem-solving.

Example: List and explain key safety procedures in automotive technology.

2. Practical Skills (Psychomotor – 40%)

Students will demonstrate proficiency in hands-on automotive tasks and technical procedures, showing accuracy and consistency.

Example: Accurately measure and record tire pressure using proper tools.

3. Attitude, Participation & Professionalism (Affective – 30%)

Students will demonstrate positive work habits, teamwork, responsibility, and respect for themselves, others, and the learning environment.

Example: Consistently follow safety protocols and collaborate effectively with peers.

Grading Scale

Grades are earned on a total point basis.

- **A** = 100% – 93%
- **B** = 92% – 86%
- **C** = 85% – 77%
- **D** = 76% – 70%
- **F** = 69% and below

Weighted Categories:

- **Knowledge & Understanding** – 30%
- **Practical Skills** – 40%
- **Attitude & Professionalism** – 30%

Attendance & Participation

- Regular attendance is essential. Unexcused absences will result in missed labs, lectures, and possibly an incomplete for the class.
- Active participation is expected. A student's grade is strongly influenced by their engagement, completion of tasks, and willingness to learn.

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Classroom & Shop Rules

Working on vehicles can be a fun, exciting, and rewarding career. At **Western Montgomery Career and Technology Center**, our number one priority is safety. Proper precautions and rules must be implemented and followed at all times to protect students, staff, customers, and the vehicles being serviced.

Our mission is to prepare students for the real world through:

- Hands-on shop activities
- Textbook knowledge and theory
- Reflective writing
- Familiarization with automotive technology

Failure to follow the rules will result in removal from shop participation for the day and the assignment of alternative work.

General Rules

1. During lectures or theory, students must not interrupt others or the instructor.
2. Students must begin class on time with all required supplies.
3. Prior authorization is required before starting any lab or shop work.
4. Proper PPE must be worn at all times in the lab and shop.
5. Students are responsible for all equipment, tools, and supplies they use.
6. Permission must be obtained from the instructor before using any equipment.

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Shop Safety Rules

- Safety glasses with side shields or goggles must be worn at all times while in the shop.
- No loose-fitting clothing is allowed when working in the shop.
- No open-toe shoes or sandals are permitted. Boots with a heel are required.
- Always inform the instructor when operating lifts or jacks.
- Two persons must be present to operate the brake lathe unless authorized.
- Clean up the work area after every project. If unfinished, clean the area before leaving—others may need to use it.
- All tools must be cleaned and returned to the proper location when finished.
- No tools may be removed from the shop without authorization.
- No horseplay is allowed in the shop. Do not distract anyone using equipment.
- Report all injuries immediately to Mr. DuBose, Mr. Bray, or any staff member.
- Sweep the floor area where work was performed after every use.
- Safety is the top priority. If unsure of a procedure, **ASK** before proceeding.
- Never attempt to use equipment without proper training.
- Report any broken tools or machines immediately to the instructor.



Course Outline – Automotive Technology

Note the following:

- Students will choose one of the three classes from Level 4.
- Final Exams: Will be announced prior to testing to allow proper preparation.
- ***This document is subject to change based on the needs of the student.***

Level 1	Overview & Assessment	Duration
Orientation	• Review syllabus and student handbook. • Introduction to classroom and shop procedures. • (Assign) OSHA 10-Hour General Industry: Automotive • Assessment: Participation, discussion checks.	1 week
Unit 0 Automotive Background & Overview	• Review the history of automobiles. • Explain the purpose of an automotive technician. • Assessment: Quizzes, lab activities, pre/post-tests	2 weeks
Unit 1 A0 Fundamentals	• Shop safety, PPE, hand tools, fasteners, and precision measuring • Assessment: Quizzes, lab activities, pre/post-tests	2 weeks
Unit 2 Steering & Suspension	• Steering systems, suspension components, and alignment fundamentals • Assessment: Written tests, parts ID, performance tasks, quizzes, lab activities, pre/post-tests	15 weeks
Unit 3 Brakes	• Principles, inspection, service, and repair of brake systems • Assessment: Written tests, parts ID, performance tasks, quizzes, lab activities, pre/post-tests	15 weeks

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Level 2	Overview & Assessment	Duration
Prerequisite (Must be completed before class begins) Safety	- SP2 Mechanical Safety and Pollution Prevention Assessment: Online quizzes and tests	IWT Independent Work Time
Unit 1 Orientation	- Review updated syllabus, policies, and shop expectations - Re-introduction to classroom and lab procedures Assessment: Participation, discussion checks	1 week
Unit 2 Electrical Systems	- Basic electrical theory, circuits, wiring, and testing equipment Assessment: Written tests, parts ID, performance tasks	12 weeks
Unit 3 Engine Repair	- Engine disassembly, inspection, and reassembly Assessment: Project-based learning, performance tasks, written exams	12 weeks
Unit 4 Engine Electrical	- Ignition systems, charging, starting, and advanced electrical diagnostics Assessment: Written tests, parts ID, performance tasks	12 weeks

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Level 3	Overview & Assessment	Duration
Unit 1 Orientation	- Review updated syllabus, policies, and shop expectations - Re-introduction to classroom and lab procedures Assessment: Participation, discussion checks	1 week
Unit 1 A0 Fundamentals	- Shop safety, PPE, hand tools, fasteners, and precision measuring Assessment: Quizzes, lab activities, pre/post-tests	2 weeks
Unit 2 Manual Transmissions	- Clutch systems, gearboxes, and driveline components Assessment: Written tests, parts ID, performance tasks	8 weeks
Unit 3 Automatic Transmissions	- Operation, service, and repair fundamentals Assessment: Written tests, parts ID, performance tasks	8 weeks
Unit 4 HVAC (Heating, Ventilation, & Air Conditioning)	- Principles of automotive climate control and service procedures Assessment: Written tests, parts ID, performance tasks	8 weeks
Unit 5 PA State Inspection & Emissions	- State inspection procedures, emissions systems, and testing requirements Assessment: Written and performance tests	8 weeks

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Level 4	Overview & Assessment	Duration
Prerequisite (Must be completed before class begins) Safety	- SP2 Mechanical Safety and Pollution Prevention Assessment: Online quizzes and tests	IWT Independent Work Time
Unit 1 Orientation	- Final review of policies, professionalism, and career readiness - Focus on industry-level expectations Assessment: Participation, discussion checks	1 week
Unit 2 Hybrid Vehicle Systems	- Hybrid vehicle description, operation, and safety training. Assessment: Written tests, parts ID, performance tasks	4 weeks
Unit 3 Manufacturer/Global Certifications	- Industry-based training and certifications Assessment: Sponsor evaluation, written test	1 year
Unit 4 SEMA/APEX Industry Experience	- Exposure to industry standards, tools, and technology Assessment: Written and performance tests	1 year
Unit 5 Competitive Events	- Skills competitions (local, state, and national) Assessment: Performance, written tests	1 year

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Closing Statement

The Automotive Technology program at **Western Montgomery Career and Technology Center** is designed to prepare you for success in both education and the workforce. By committing to safety, professionalism, and consistent effort, you will gain the skills, knowledge, and work habits needed to thrive as an apprentice technician or continue your studies at a post-secondary institution.

Your success in this program depends on your willingness to learn, your respect for others, and your dedication to doing your best each day. Remember: the habits you build here—safety, teamwork, responsibility, and pride in your work—are the same habits that employers value in the real world.

We look forward to working with you and helping you reach your goals. Together, let's make this a productive and rewarding experience.

Mr. DuBose & Mr. Bray

Automotive Technology Instructors

Western Montgomery Career and Technology Center