

Automotive Technology Program Syllabus

Tuscola Technology Center – Automotive Technology (CIP 47.0604)

Program Length: 2 Years (Grades 11–12)

Accreditation: ASE Education Foundation – Maintenance & Light Repair (MLR) Standards

Instructor: Count Wood

Program Description

The Automotive Technology Program prepares students to enter the automotive service industry with skills in diagnosis, maintenance, and repair of automotive systems. Instruction emphasizes hands-on learning, industry safety, and preparation for **ASE student certifications**, State of Michigan mechanic certifications, and entry-level employment or further education.

Program Goals

1. Prepare students to pass **ASE certification tests** (MR, A-series) as outlined by the ASE Education Foundation and Michigan credentialing.
 2. Ensure students demonstrate proficiency in Maintenance & Light Repair competencies.
 3. Align instruction with the **Michigan Perkins Competencies (CIP 47.0604)** including work orders, diagnostic strategies, and service tasks.
 4. Promote safe work habits and professional ethics in the automotive industry.
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Instructional Areas & Competencies

The courses are structured around the eight ASE MLR areas and Michigan Perkins automotive competencies:

Year 1 – Automotive Technology I

Unit	Competency / Topic	Standards & Skills
Shop Safety & Tools	Shop safety, PPE, hand/power tools	Safety procedures and proper tool use
Automotive Systems Overview	Introduction to vehicles, service information	Vehicle identification systems
Maintenance & Light Repair (MR)	Preventive maintenance (fluids, filters, belts)	ASE MLR scope
Brakes (BR)	Service & diagnosis of brake systems	Hydraulic & friction systems
Electrical/Electronic Systems (EE)	Basic circuits, battery, starting/charging	Wiring diagrams, digital meters
Engine Repair (ER)	Engine teardown, measurement & repair	Pistons, bearings, valves
Work Orders & Documentation	Complete service worksheets	Customer info, corrective actions

Year 2 – Automotive Technology II

Unit	Competency / Topic	Standards & Skills
Engine Performance (EP)	Fuel, ignition, emission systems	Scan tool diagnostics
Suspension & Steering (SS)	Alignment, chassis service	Steering linkage, wheel angles
Manual Drive Train & Axles (MD)	Clutches, transmissions, axles	Disassembly/assembly
Automatic Transmission/Transaxle (AT)	Hydraulic control, service priorities	Fluid diagnostics
Heating & Air Conditioning (AC)	HVAC diagnosis, refrigerant safety	System charge, blower & controls
Advanced Diagnostics	Interpreting TSBs, tech resources	Service information systems

Cooperative Work Experience

Workplace simulation,
worksite placement

Professional attitudes

Note: Students rotate through structured projects to ensure coverage of every ASE content area and Perkins “task grid” competency objectives throughout both years.

Instructional Methods

- **Lecture & Demonstration:** Core theory of automotive systems.
 - **Hands-On Lab Projects:** Real vehicle maintenance & repair practice.
 - **Diagnostic Exercises:** Use of scan tools, multimeters, oscilloscopes.
 - **Industry Tools:** Snap-On tools, diagnostic software, service manuals.
 - **Workplace Skills:** Job readiness, communication, ethics.
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Assessments & Evaluation

Student performance includes:

- ✓ Safety evaluations and tool usage checks
 - ✓ Written tests for each automotive system
 - ✓ Practical performance assessments (ASE-aligned tasks)
 - ✓ Project portfolios and diagnostic reports
 - ✓ Industry certification test readiness
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Certifications & Credentials

Students will be prepared to sit for and earn:

🎓 **ASE Student Certifications:**

- **Maintenance & Light Repair (MR)**

- **Engine Repair (ER)**
- **Brakes (BR)**
- **Electrical/Electronic Systems (EE)**
- **Engine Performance (EP)**
- **Suspension & Steering (SS)**
- **Manual Drive Train & Axles (MD)**
- **Automatic Transmission/Transaxle (AT)**

🎓 **ASE G1 Certification** (Granted if all student certifications are achieved)

🎓 **SP/2 Safety Certification**

🎓 **Meter/Tool Certifications (e.g., Snap-On 504)**

Materials & Resources

- ASE Education Foundation curriculum materials
 - Automotive service information databases
 - Shop safety manuals
 - Diagnostic tools and hand tools
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Professional Development

Students are encouraged to join:

- **SkillsUSA** competitions
- Advisory committee activities
- Career fairs and college articulation opportunities

Post-Program Pathways

Graduates are prepared for:

- Entry-level service technician roles
- Advanced technician apprenticeships
- Postsecondary automotive programs (e.g., Ferris State, Delta College)
- Continued ASE cert progression