

Automotive Technology | One-Year Program: Scope & Sequence

Year 1, Semester 1

AT101 Automotive Technologies I
(15 Weeks)

Unit 1 (1 Week, 16 Hours)

First-Year Experience (FYE 101)

- Apply habits of mind that promote academic, personal, and professional growth.
- Practice effective interpersonal skills that foster relationships with faculty, staff, peers, and members of the Field of Interest (FOI) community.
- Identify costs and financial resources necessary to achieving educational and career goals.
- Identify self-care strategies that help individuals better navigate their college experience.
- Recognize how identities, backgrounds, experiences, and societal factors impact academic and career choices, and civic engagement in a diverse world.
- Utilize career development models, theories, assessments, and research to explore and clarify career plans and educational goals.
- Apply career decision-making to support the creation of a comprehensive, individualized education plan.
- Practice goal setting, time management, and metacognition to work toward personal, academic, and/or professional milestones.
- Utilize appropriate campus resources, tools, and opportunities to support building connections and achieving individual educational goals.

Professional Skills: 5.A-E

Academic Standards: ELA.11-12.RI.10, ELA.11-12.W.4, ELA.11-12.W.9

Work-based Learning: Career Exploration Activities

Unit 2 (3.25 Weeks, 52 Hours: 26 Class, 26 Lab)

Introduction to Automotive Service (ASE 100):

- Demonstrate safe personal and workplace habits according to industry standards.
- Demonstrate industry standard professionalism that includes dress, attendance and customer service.
- Effectively communicate with diverse audiences.
- Document work performed according to industry standards.
- Demonstrate the function and use of basic automotive tools and equipment.
- Demonstrate proper use of specialized tools.
- Identify the major automotive systems and their functions.
- Select proper fasteners in conjunction with thread repair.
- Perform vehicle inspection.
- Perform recommended manufacturer maintenance.
- Use appropriate service information, tools and equipment to perform common light repairs.
- Address manufacturer-specific training.

Automotive Technologies 47.0600.20

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Professional Skills: 4.A-4.F

Academic Standards: 7. EE.B.3, ELA. 11-12.W.8

Work-based Learning: Guest Speaker

Technical Standard: 9.1-9.27

Certification: Safety Courses: PS2 Automotive Service Safety, SP2 Automotive Pollution Prevention, SP2 Lift Safety

Unit 3 (6.25 Weeks, 100 Hours: 25 Class, 75 Lab)

Introduction to Automotive Electrical (ASE 160):

- Demonstrate safe personal and workplace habits according to industry standards.
- Demonstrate industry standard professionalism that includes dress, attendance and customer service.
- Effectively communicate with diverse audiences.
- Document work performed according to industry standards.
- Effectively use digital volt ohm meter/digital multimeter (DVOM/DMM) to determine resistance, amperage, and voltage.
- Research appropriate service information pertaining to electrical systems, battery, starting, and charging systems.
- Use appropriate service information, tools, and equipment to verify proper operation of electrical systems.
- Use appropriate service information, tools, and equipment to diagnose electrical system faults.
- Use appropriate service information, tools, and equipment to repair electrical systems.
- Explain the theory and operation of electrical systems.
- Use Ohm's, Watt's and Kirchhoff's Laws to determine circuit characteristics and operation.
- Discuss the theory and operation of an integrated system

Professional Skills: 1.A-1.D

Academic Standards: ELA.11-12.W.4, 5.NF.B.3

Work-based Learning: Guest Speaker, Resume Writing

Technical Standard: 6.1-6.7, 6.9- 6.11

Unit 3 (4.5 Weeks, 72 Hours: 18 Class, 54 Lab)

Brake & Anti-Lock Braking Systems (ASE 150):

- Demonstrate safe personal and workplace habits according to industry standards.
- Demonstrate industry standard professionalism that includes dress, attendance and customer service.
- Effectively communicate with diverse audiences.
- Document work performed according to industry standards.
- Research appropriate service information pertaining to brake systems.

- Use appropriate service information, tools, and equipment to verify proper operation of brake systems.
- Use appropriate service information, tools, and equipment to diagnose brake system faults.
- Use appropriate service information, tools, and equipment to repair brake systems.
- Discuss the theory and operation of integrated systems.

Professional Skills: 8A-I

Academic Standards: 7.G.B4, ELA SL4.6

Work-based Learning: Guest Speaker, Job Shadow

Technical Standard: 5.1-5.37

Semester Final Exam

Year 1, Semester 2

AT102 Automotive Technologies II
(15 Weeks)

Unit 3 Continued (2 Weeks, 32 Hours: 10 Class, 22 Lab)

Brake & Anti-Lock Braking Systems (ASE 150):

- Demonstrate safe personal and workplace habits according to industry standards.
- Demonstrate industry standard professionalism that includes dress, attendance and customer service.
- Effectively communicate with diverse audiences.
- Document work performed according to industry standards.
- Research appropriate service information pertaining to brake systems.
- Use appropriate service information, tools, and equipment to verify proper operation of brake systems.
- Use appropriate service information, tools, and equipment to diagnose brake system faults.
- Use appropriate service information, tools, and equipment to repair brake systems.
- Discuss the theory and operation of integrated systems.

Professional Skills: 8A-I

Academic Standards: 7.G.B4, ELA SL4.6

Work-based Learning: Guest Speaker, Job Shadow

Technical Standard: 5.1-5.37

Certification: Automotive Service Excellence (ASE) Entry-Level ASE 5 Brakes

Unit 4 (6.5 Weeks, 100 Hours: 25 Class, 75 lab)

Engine Performance (ASE 180):

- Demonstrate safe personal and workplace habits according to industry standards.
- Demonstrate industry standard professionalism that includes dress, attendance and customer service.
- Effectively communicate with diverse audiences.
- Document work performed according to industry standards.

- Use appropriate service information, tools, and equipment as relates to engine operations.
- Describe the principles and factors of engine operations.
- Diagnosis and repair of engine operations.
- Discuss the theory and operation of the integrated system.

Professional Skills: 5A-E, 6A-C

Academic Standards: 6RP.A3, ELA 11-12 W8

Work-Based Learning: Guest Speaker

Technical Standard: 8.1-8.15

Unit 5 (6.5 Weeks, 100 Hours: 25 Class, 75 Lab)

Suspension & Steering (ASE 140):

- Demonstrate safe personal and workplace habits according to industry standards.
- Demonstrate industry standard professionalism that includes dress, attendance and customer service.
- Effectively communicate with diverse audiences.
- Document work performed according to industry standards.
- Use appropriate service information, tools and equipment to diagnose and repair supplemental restraint systems (SRS).
- Describe the function of vehicle dynamic systems.
- Perform a four-wheel alignment.
- Describe the principles and factors that govern steering, suspension, and alignment performance.
- Use appropriate service information, tools and equipment for tire service.
- Use appropriate service information, tools and equipment to diagnose steering, suspension, and alignment concerns.
- Use appropriate service information, tools and equipment to adjust, replace and/or repair suspension and steering systems.
- Use appropriate service information, tools and equipment to disassemble, repair and reassemble the steering and suspension systems.
- Discuss the theory and operation of integrated systems.

Professional Skills: 9 A-C

Academic Standards: 8 GB7, ELA 11SL4

Work-Based Learning: Guest Speaker, Workplace Visit

Technical Standard: 4.1-4.36

Certification: Automotive Service Excellence (ASE) Entry-Level - ASE 4 Steering, Suspension and Alignment

ADE Technical Skills Assessment

CCL 5936N (ASE 150 Braking Systems) CCL 5934N (ASE 140 Steering Suspension and Alignment)