

2020/2021 Student Competency Record
Automotive Technology II
8507 - 36 weeks, 280 hours

Student	School Year
School	Teacher Signature

Traditional letter or numerical grades do not provide adequate documentation of student achievement in competency-based education; therefore, the Virginia Standards for CBE require a recording system to provide information about competencies achieved to employer, student-employee, and teacher. The Student Competency Record provides a means for keeping track of student progress. Ratings are assigned by the teacher for classroom competency achievement and by the teacher-coordinator in conjunction with the training sponsor when competence is evaluated on the job.

Tasks/competencies designated "Required" are considered essential statewide and are required of all students. In some courses, all tasks/competencies have been identified as required. Tasks/competencies marked "Optional" are considered optional; they and/or additional tasks/competencies may be taught at the discretion of the school division. Tasks/competencies marked with an asterisk (*) are considered sensitive, and teachers should obtain approval by the school division before teaching them. Student competency records should be kept as long as the student is enrolled in the school and for five years after the student graduates/leaves the school.

Note: Students with an Individualized Education Program (IEP) or an Individualized Student Alternative Education Plan (ISAEP) will be rated, using the following scale, only on the competencies identified in their IEP or ISAEP.

Students will be expected to achieve a **satisfactory rating** (one of the three highest marks) on the Student Competency Record (SCR) rating scale on at least 80% of the required (essential) competencies in a CTE course.

...RATING SCALE...

- 1 - Can teach others**
- 2 - Can perform without supervision**
- 3 - Can perform with limited supervision**
- 4 - Can perform with supervision**
- 5 - Cannot perform**

8507 36 weeks, 280 hours	Automotive Technology II TASKS/COMPETENCIES		Date	Rating
Demonstrating Personal Qualities and Abilities				
Required	1	Demonstrate creativity and innovation.		
Required	2	Demonstrate critical thinking and problem solving.		
Required	3	Demonstrate initiative and self-direction.		
Required	4	Demonstrate integrity.		
Required	5	Demonstrate work ethic.		
Demonstrating Interpersonal Skills				
Required	6	Demonstrate conflict-resolution skills.		
Required	7	Demonstrate listening and speaking skills.		
Required	8	Demonstrate respect for diversity.		
Required	9	Demonstrate customer service skills.		
Required	10	Collaborate with team members.		
Demonstrating Professional Competencies				
Required	11	Demonstrate big-picture thinking.		
Required	12	Demonstrate career- and life-management skills.		
Required	13	Demonstrate continuous learning and adaptability.		
Required	14	Manage time and resources.		
Required	15	Demonstrate information-literacy skills.		
Required	16	Demonstrate an understanding of information security.		
Required	17	Maintain working knowledge of current information-technology (IT) systems.		
Required	18	Demonstrate proficiency with technologies, tools, and machines common to a specific occupation.		
Required	19	Apply mathematical skills to job-specific tasks.		
Required	20	Demonstrate professionalism.		
Required	21	Demonstrate reading and writing skills.		
Required	22	Demonstrate workplace safety.		
Examining All Aspects of an Industry				
Required	23	Examine aspects of planning within an industry/organization.		
Required	24	Examine aspects of management within an industry/organization.		

Required	25	Examine aspects of financial responsibility within an industry/organization.		
Required	26	Examine technical and production skills required of workers within an industry/organization.		
Required	27	Examine principles of technology that underlie an industry/organization.		
Required	28	Examine labor issues related to an industry/organization.		
Required	29	Examine community issues related to an industry/organization.		
Required	30	Examine health, safety, and environmental issues related to an industry/organization.		
Addressing Elements of Student Life				
Required	31	Identify the purposes and goals of the student organization.		
Required	32	Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.		
Required	33	Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.		
Required	34	Identify Internet safety issues and procedures for complying with acceptable use standards.		
Exploring Work-Based Learning				
Required	35	Identify the types of work-based learning (WBL) opportunities.		
Optional	36	Reflect on lessons learned during the WBL experience.		
Required	37	Explore career opportunities related to the WBL experience.		
Optional	38	Participate in a WBL experience, when appropriate.		
REQUIRED SUPPLEMENTAL TASKS				
Lab/Shop and Personal Safety				
Required	39	Identify general lab/shop safety rules and procedures.		
Required	40	Utilize safe procedures for handling tools and equipment.		
Required	41	Identify and use proper placement of floor jacks and jack stands.		
Required	42	Identify and use proper procedures for safe lift operation.		
Required	43	Use proper ventilation procedures for working in the lab/shop area.		
Required	44	Identify marked safety areas.		

Required	45	Identify the location and the types of fire extinguishers and other fire safety equipment; demonstrate knowledge of the procedures for using fire extinguishers and other fire safety equipment.		
Required	46	Identify the location and use of eye wash stations.		
Required	47	Identify the location of posted evacuation routes.		
Required	48	Comply with the required use of safety glasses, ear protection, gloves, and shoes during lab/shop activities.		
Required	49	Identify and wear appropriate clothing for lab/shop activities.		
Required	50	Secure hair and jewelry for lab/shop activities.		
Required	51	Demonstrate awareness of the safety aspects of supplemental restraint systems (SRS), electronic brake control systems, and hybrid vehicle high-voltage circuits.		
Required	52	Demonstrate awareness of the safety aspects of high-voltage circuits such as high intensity discharge (HID) lamps, ignition systems, and injection systems.		
Required	53	Locate and demonstrate knowledge of safety data sheets (SDS).		
ENGINE REPAIR				
General				
Required	54	Install engine covers using gaskets, seals, and sealers as required.		
Required	55	Verify engine mechanical timing.		
Required	56	Verify operation of the instrument panel engine warning indicators.		
Required	57	Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.		
Required	58	Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with thread insert.		
Cylinder Head and Valve Train				
Required	59	Adjust valves (mechanical or hydraulic lifters).		
Required	60	Identify components of the cylinder head and valve train.		
AUTOMATIC TRANSMISSION AND TRANSAXLE				
In-Vehicle Transmission/Transaxle				
Required	61	Inspect, adjust, and/or replace external manual valve shift linkage, transmission range sensor/switch, and/or park/neutral position switch.		
Required	62	Inspect for leakage at external seals, gaskets, and bushings.		

Required	63	Inspect, replace, and/or align power train mounts.		
Off-Vehicle Transmission and Transaxle				
Required	64	Describe the operational characteristics of a continuously variable transmission (CVT).		
Required	65	Describe the operational characteristics of a hybrid vehicle drive train.		
MANUAL DRIVE TRAIN AND AXLES				
Transmission/Transaxle				
Required	66	Describe the operational characteristics of an electronically-controlled manual transmission/transaxle.		
Drive Shaft, Half Shafts, Universal Joints, and Constant-Velocity (CV) Joints (Front, Rear, All, and Four-wheel Drive)				
Required	67	Inspect, remove, and/or replace bearings, hubs, and seals.		
Required	68	Inspect, service, and/or replace shafts, yokes, boots, and universal/constant-velocity (CV) joints.		
Required	69	Inspect locking hubs.		
Required	70	Check for leaks at drive assembly and transfer case seals; check vents; check fluid level; use proper fluid type per manufacturer specification.		
Differential Case Assembly				
Required	71	Clean and inspect differential case; check for leaks; inspect housing vent.		
SUSPENSION AND STEERING SYSTEMS				
General				
Required	72	Disable and enable supplemental restraint system (SRS).		
Wheel Alignment				
Required	73	Perform prealignment inspection; measure vehicle ride height.		
Required	74	Describe alignment angles (camber, caster, and toe).		
BRAKES				
Electronic Brakes, Traction Control, and Stability Control Systems				
Required	75	Identify traction control/vehicle stability control system components.		
Required	76	Describe the operation of a regenerative braking system.		
ELECTRICAL/ELECTRONIC SYSTEMS				
General				

Required	77	Research vehicle service information, including vehicle service history, service precautions, and technical service bulletins.		
Required	78	Demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity (Ohm's law).		
Required	79	Identify lane departure and radar cruise systems.		
Required	80	Use wiring diagrams to trace electrical/electronic circuits.		
Required	81	Demonstrate proper use of a digital multimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow, and resistance.		
Required	82	Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits.		
Required	83	Check operation of electrical circuits using a test light.		
Required	84	Use fused jumper wires to check operation of electrical circuits.		
Required	85	Measure key-off battery drain (parasitic draw).		
Required	86	Inspect and test fusible links, circuit breakers, and fuses; determine necessary action.		
Required	87	Repair and/or replace connectors, terminal ends, and wiring of electrical/electronic systems (including solder repair).		
Battery Service				
Required	88	Perform battery state-of-charge test; determine necessary action.		
Required	89	Confirm proper battery capacity for vehicle application; perform battery capacity and load test; determine necessary action.		
Required	90	Maintain or restore electronic memory functions.		
Required	91	Inspect and clean battery; fill battery cells; check battery cables, connectors, clamps, and hold-downs.		
Required	92	Perform slow/fast battery charge according to manufacturer's recommendations.		
Required	93	Jump-start vehicle using jumper cables and a booster battery or an auxiliary power supply.		
Required	94	Identify safety precautions for high-voltage systems on electric, hybrid-electric, and diesel vehicles.		
Required	95	Identify electrical/electronic modules, security systems, radios, and other accessories that require reinitialization or code entry after reconnecting vehicle battery.		

Required	96	Identify hybrid vehicle auxiliary (12V) battery service, repair, and test procedures.		
Starting System				
Required	97	Perform starter current draw test; determine necessary action.		
Required	98	Perform starter circuit voltage drop tests; determine necessary action.		
Required	99	Inspect and test starter relays and solenoids; determine necessary action.		
Required	100	Remove and install starter in a vehicle.		
Required	101	Inspect and test switches, connectors, and wires of starter control circuits; determine necessary action.		
Required	102	Demonstrate knowledge of an automatic idle-stop/start-stop system.		
Charging System				
Required	103	Perform charging system output test; determine necessary action.		
Required	104	Inspect, adjust, and/or replace generator (alternator) drive belts; check pulleys and tensioners for wear; check pulley and belt alignment.		
Required	105	Remove, inspect, and/or replace generator (alternator).		
Required	106	Perform charging circuit voltage drop tests; determine necessary action.		
Lighting, Instrument Cluster, Driver Information, and Body Electrical Systems				
Required	107	Inspect interior and exterior lamps and sockets, including headlights and auxiliary lights (fog lights/driving lights); replace as needed.		
Required	108	Aim headlights.		
Required	109	Identify system voltage and safety precautions associated with high-intensity discharge (HID) headlights.		
Required	110	Disable and enable supplementary restraint system (SRS); verify indicator lamp operation.		
Required	111	Remove and reinstall door panel.		
Required	112	Describe the operation of keyless entry/remote-start systems.		
Required	113	Verify operation of instrument panel gauges and warning/indicator lights; reset maintenance indicators.		
Required	114	Verify windshield wiper and washer operation; replace wiper blades.		
HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)				
General				

Required	115	Research vehicle service information, including refrigerant/oil type, vehicle service history, service precautions, and technical service bulletins.		
Required	116	Identify heating, ventilation and air conditioning (HVAC) components and configuration.		
Refrigeration System Components				
Required	117	Inspect and replace air conditioning (AC) compressor drive belts, pulleys, and tensioners; visually inspect AC components for signs of leaks; determine needed action.		
Required	118	Identify hybrid vehicle AC system electrical circuits and the service/safety precautions.		
Required	119	Inspect AC condenser for airflow restrictions; determine necessary action.		
Heating, Ventilation, and Engine Cooling Systems				
Required	120	Inspect engine cooling and heater system hoses and pipes; determine necessary action.		
Operating Systems and Related Controls				
Required	121	Inspect AC-heater ducts, doors, hoses, cabin filters, and outlets; determine necessary action.		
Required	122	Identify the source of HVAC system odors.		
ENGINE PERFORMANCE				
General				
Required	123	Research vehicle service information, including fuel type, vehicle service history, service precautions, and technical service bulletins.		
Required	124	Perform engine absolute manifold pressure tests (vacuum/boost); document results.		
Required	125	Perform cylinder power balance test; document results.		
Required	126	Perform cylinder cranking and running compression tests; document results.		
Required	127	Perform cylinder leakage test; document results.		
Required	128	Verify engine operating temperature.		
Required	129	Remove and replace spark plugs; inspect secondary ignition components for wear and damage.		
Computerized Engine Controls				
Required	130	Retrieve and record diagnostic trouble codes (DTC), on-board diagnostic (OBD) monitor status, and freeze frame data; clear codes when applicable.		
Required	131	Describe the use of the OBD monitors for repair verification.		

