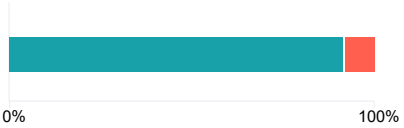
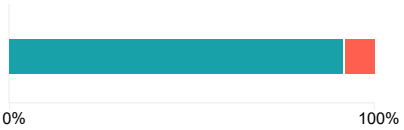
Program Assessment Plan 2021-2023
Automotive Technology

Automotive Technology Learning Outcomes

SLO 1: Engine performance diagnostics

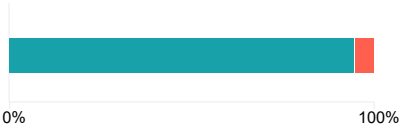
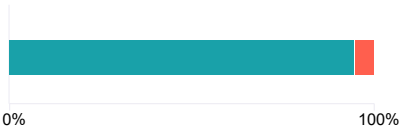
Perform engine performance diagnostics with testing equipment commonly used in the industry.

MEASURES	RESULTS	ACTIONS
Measure 1.1 Performance Evaluation: Students will be able to successfully perform a compression check on a common four-cylinder engine within 30 minutes. Direct - Exam (Course) *Engine Mech & Related Problems: AUTO 1801* **Target** 75% of students will be able to accurately perform a compression check at the 30-minute mark scoring 3-4 on the assignment rubric.	MET Measure 1.1 Met Not Met  0% 100% Met: 92% Not Met: 8% Met Total: 92% Not Met Total: 8% **Analysis** This is a fairly straightforward activity for students to install a compression tester. Students review service manual and record results for each cylinder. Some students struggle with reading and interpreting results or finding the correct service information for the vehicle.	**Maintain Assessment Strategy** The approach for this assessment is strong. No changes to instruction are recommended. In the new cycle, the performance targets will be increased. **Revise Benchmark / Target** COMPLETE The performance benchmark for this assessment will be increased in the next cycle: 80% of students will be able to accurately perform a compression check at the 30-minute mark scoring 3-4 on the assignment rubric.
Measure 1.2 Performance Evaluation: Utilize a scanning tool to retrieve at least four out of five diagnostic trouble codes. Direct - Exam (Course) *Engine Mech & Related Problems: AUTO 1801* **Target** 80% of students will earn a score of 4 out of 4 on diagnostic assignment rubric.	MET Measure 1.2 Met Not Met  0% 100% Met: 92% Not Met: 8% Met Total: 92% Not Met Total: 8% **Analysis** Most students struggle with finding the diagnostic port location on the vehicle. It can be found in the service manual/information but it isn't always straightforward to find.	**Other - [Instructional Strategy]** COMPLETE Faculty will spend more time working with students on reviewing service manual/information and locating service ports. **Revise Benchmark / Target** COMPLETE In the next cycle, the benchmark for this measure will be increased: 85% of students will earn a score of 4 out of 4 on diagnostic assignment rubric.

SLO 2: Operate tools and equipment

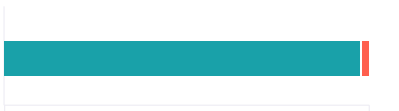
Operate tools and equipment commonly used in the automotive industry including hand tools, power tools, measuring equipment, and lifting equipment.

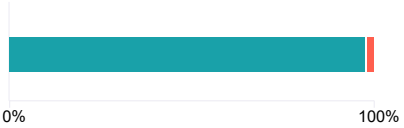
MEASURES	RESULTS	ACTIONS

Measure 2.1 Performance Evaluation (Pass/Fail): Identify vehicle lift points and properly lift a vehicle using a two-post lift on the first attempt. Direct - Exam (Course) *Intro To Technology & Service: AUTO 1101* **Target** 90% of students will earn a pass mark on the lifting assignment.	MET Measure 2.1 Met Not Met  Met: 95% Not Met: 5% Met Total: 95% Not Met Total: 5% **Analysis** Students look up the service manual information for the vehicle lift parts and find/install the proper adapters for the lift. Students have plenty of repetition with this activity so it helps to reinforce their ability. Identifying lift points is the most challenging part for students initially.	**Other - [Instructional Strategy]** COMPLETE Faculty will place additional emphasis on looking up the proper lift points in the service information. The more students engage with this information the more it becomes common to them. **Maintain Assessment Strategy** This measure will be retained in the next cycle with the same performance benchmark.
Measure 2.2 Performance Evaluation (Pass/Fail): Successfully torque lug nuts using a torque wrench in the correct pattern on the first attempt. Direct - Exam (Course) *Intro To Technology & Service: AUTO 1101* **Target** 90% of students will earn a pass mark on the torque wrench operation assignment.	MET Measure 2.2 Met Not Met  Met: 95% Not Met: 5% Met Total: 95% Not Met Total: 5% **Analysis** Students regularly interact with this task throughout the program. Students have to select the correct size socket and tighten the lug nuts to the specified torque. Some students initially struggle with reading the torque wrench and setting it correctly.	**Maintain Assessment Strategy** This measure will be retained in the next cycle with the same performance benchmark. **Other - [Instructional Strategy]** COMPLETE Through repetition, students develop a skillset for reading torque wrenches. Additional practice will be provided prior to the first attempt for this measure.

SLO 3: Brake system diagnosis/repair

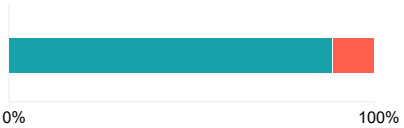
Facilitate diagnosis and repair of ABS, disc brake, and drum brake systems.

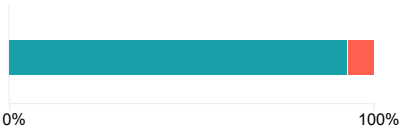
MEASURES	RESULTS	ACTIONS
Measure 3.1 Performance Evaluation: Utilize dial indicator to accurately measure disc rotor run out. *Brake Systems: AUTO 1501* **Target**	MET Measure 3.1 Met Not Met  Met: 98%	**Revise Benchmark / Target** COMPLETE The performance target will be increased in the next cycle: 85% of students will be able to demonstrate successful use of dial indicator to measure disc rotor run out. **Other - [Instructional Strategy]** COMPLETE

75% of students will be able to demonstrate successful use of dial indicator to measure disc rotor run out.	Not Met: 2% Met Total: 98% Not Met Total: 2% **Analysis** Students identify rotor run out specifications in service information. Get the vehicle on the lift, remove tire from the vehicle and install a dial caliper onto a fixed surfaced. Some students struggle with finding a solid surface. Magnets are typically flat which causes some struggle on a curved surface.	Students will be allowed additional practice time setting up dial indicator tools prior to assessment.
Measure 3.2 Performance Evaluation: Retrieve one of two ABS system diagnostic trouble codes and locate service information for appropriate repair procedure. Direct - Exam (Course) *Brake Systems: AUTO 1501* **Target** 80% of students will earn a score of 2 or 3 on diagnostic assignment rubric.	MET Measure 3.2 Met Not Met  Met: 98% Not Met: 2% Met Total: 98% Not Met Total: 2% **Analysis** Students use the same diagnostic port for break codes. Students use the service information to locate the diagnostic port. Use scan tool to retrieve codes. Students initially struggled with locating the service port accurately since every manufacturer is different.	**Other - [Instructional Strategy]** COMPLETE Students will spend more time covering service information prior to first attempt in order to more easily locate diagnostic ports. **Revise Benchmark / Target** COMPLETE In the next cycle, the performance benchmark will be increased: 85% of students will earn a score of 2 or 3 on diagnostic assignment rubric.

SLO 4: Steering/Suspension corrective action

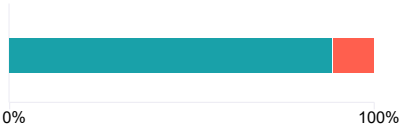
Conduct corrective action for steering and suspension concerns based on diagnosis.

MEASURES	RESULTS	ACTIONS
Measure 4.1 Exam: Identifying tire wear patterns examination. Direct - Exam (Course) *Suspension & Steering Systems: AUTO 1401* **Target** 80% of students should be able to successfully identify at least four out of six tire wear patterns.	MET Measure 4.1 Met Not Met  Met: 89% Not Met: 11% Met Total: 89% Not Met Total: 11% **Analysis** Students are shown examples during alignments and repair work on different vehicles along with causes. Students also review book work with examples. Some students struggle with completing traditional	**Other - [Instructional Strategy]** COMPLETE Faculty will provide additional opportunities to evaluate tire wear issues prior to the exam. **Maintain Assessment Strategy** This measure will be retained in the next cycle with the same performance benchmark.

	written exams and may not place enough focus on the exam item.	
Measure 4.2 Performance Evaluation: Identify and perform toe-in/toe-out adjustments. Direct - Exam (Course) *Suspension & Steering Systems: AUTO 1401* **Target** 80% of students should be able to perform toe-in/toe-out adjustment corrective procedure on vehicle.	MET Measure 4.2 Met Not Met  0% 100% Met: 93% Not Met: 7% Met Total: 93% Not Met Total: 7% **Analysis** Students begin by looking up service information and identifying the adjustment points. Students then identify the correct tools for the adjustment and then perform the adjustment. Students struggle with identifying the right location to make adjustments due to varying types of systems.	**Revise Benchmark / Target** COMPLETE The performance target will be increased in the next cycle: 85% of students should be able to perform toe-in/toe-out adjustment corrective procedure on vehicle. **Other - [Instructional Strategy]** COMPLETE Students will spend more time identifying steering systems and identifying adjustment points

SLO 5: Automotive HVAC systems

Diagnose and repair automotive HVAC Systems utilizing common industry tools

MEASURES	RESULTS	ACTIONS
Measure 5.1 Performance Evaluation (Pass/Fail): Evacuate and recharge an automotive A/C system using the recycling and recovery machine on first attempt. Direct - Exam (Course) *Auto Heating& Air Conditioning: AUTO 1701* **Target** 80% of students will earn a pass mark on the evacuate and recharge assignment.	MET Measure 5.1 Met Not Met  0% 100% Met: 89% Not Met: 11% Met Total: 89% Not Met Total: 11% **Analysis** Students use service information to look-up service port locations. These can be hard to find depending on the vehicle type. This is the biggest challenge for students. Faculty have to reinforce the need to review service information but then also take time to search for ports.	**Maintain Assessment Strategy** This measure will be retained in the next cycle with the same performance benchmark. **Other - [Instructional Strategy]** COMPLETE Students will have more opportunities for practicing locating service ports using manufacturer service information
Measure 5.2 Performance Evaluation (Pass/Fail): Locate and identify service ports on automotive A/C system and connect proper A/C gauges on first attempt. Direct - Exam (Course)	MET Measure 5.2 Met Not Met 	**Other - [Instructional Strategy]** COMPLETE Students will have more opportunities for practicing locating service ports using manufacturer service information **Maintain Assessment Strategy**

Auto Heating& Air Conditioning: AUTO 1701 **Target** 80% of students will earn a pass mark on service port assignment.	0% 100% Met: 89% Not Met: 11% Met Total: 89% Not Met Total: 11% **Analysis** Students use service information to look-up service port locations. These can be hard to find depending on the vehicle type. This is the biggest challenge for students. Faculty have to reinforce the need to review service information but then also take time to search for ports.	This measure will be retained in the next cycle with the same performance benchmark.