

Program SLOs

Automotive Mechanics Technology

A.A. – Automotive Mechanics Technology

Certificates of Achievement – Automotive Mechanics Technology, Automotive Engine Performance, Automatic Transmissions/Transaxles, Automotive Brakes, Automotive Electrical Systems, Automotive Engine Repair, Automotive Heating & Air Conditioning, Automotive Suspension & Steering, Automotive Emission Control, Small Engine Repair

Automotive Mechanics Technology Program Student Learning Outcomes from the 2015 PrOF (Program Review) Update			
1	Program Student Learning Outcome (P-SLO)	Compete in the job market	<ul style="list-style-type: none"> Compete in the job market in the field of Automotive-oriented service, maintenance and repair.
2	Program Student Learning Outcome (P-SLO)	Service and Repair competencies	<ul style="list-style-type: none"> Perform common service and repair tasks identified by the National Automotive Technical Education Foundation (NATEF.)
3	Program Student Learning Outcome (P-SLO)	Diagnosis	<ul style="list-style-type: none"> Locate industry-standard diagnostic information to localize complex automotive problems.
4	Program Student Learning Outcome (P-SLO)	Entry-level skills	<ul style="list-style-type: none"> Successfully perform the entry-level skills and tasks required for their chosen career.
5	Program Student Learning Outcome (P-SLO)	Professionalism	<ul style="list-style-type: none"> Develop professional attitudes, values, and goals.

A.A. Degree - Automotive Mechanics Technology Student Learning Outcomes*	
SLO 1	Describe the fundamentals of automotive systems to include engine operation and repair, automatic transmissions/transaxles, manual drivetrain and axles, suspension and steering, brakes, electrical and electronic systems, heating and air conditioning, and engine performance.
SLO 2	Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause and correction.
SLO 3	Understand the operation of clutches, manual transmissions, transaxles, transfer cases, drive shafts, and axle assemblies (powertrain).
SLO 4	Select, service, and replace alignment components based upon inspection and measurement and manufacture's specifications
SLO 5	Perform the necessary repair procedures for a certain set of automotive computerized control diagnostic problems.

SLO 6 Demonstrate the ability to repair automotive brake systems.
SLO 7 Describe theory and the operation of automotive ignition systems.
SLO 8 Diagnose automotive electronic control system concerns.
SLO 9 Diagnose engine mechanical concerns and conduct diagnostic testing procedures.
SLO 10 Demonstrate the ability to repair electronic fuel injection systems.
SLO 11 Demonstrate the ability to diagnose automatic transmission/transaxle concerns.
SLO 12 Explain theory and operations of automotive computerized controls.
SLO 13 Identify the fundamentals of automotive emission systems to include electrical, vacuum, computerized vehicle emission components, emission regulations, emission testing, emission reduction systems, and emission inspection/diagnostic equipment.

Certificate Automotive Mechanics Technology Student Learning Outcomes*
SLO 1 Describe the fundamentals of automotive systems to include engine operation and repair, automatic transmissions/transaxles, manual drive train and axles, suspension and steering, brakes, electrical and electronic systems, heating and air conditioning, and engine performance.
SLO 2 Describe theory and operation of Automotive Electrical/Electronic Systems
SLO 3 Prepare and write repair orders to include: customer information, vehicle identifying information, customer concerns, related service history, cause and correction.
SLO 4 Understand the operation of clutches, manual transmissions, transaxles, transfer cases, drive shafts, and axle assemblies (powertrain).
SLO 5 Describe the purpose of the small engines in current use.
SLO 6 Explain the operation of small engines.
SLO 7 Explain the operation of the combustion cycle of small engines.
SLO 8 Identify the components of small engines
SLO 9 Identify the components of the fuel and ignition systems
SLO 10 Determine correct small engine size for its intended application
SLO 11 Select, service, and replace alignment components based upon inspection and measurement and manufacture's specifications
SLO 12 Perform the necessary repair procedures for a certain set of automotive computerized control diagnostic problems.
SLO 13 Demonstrate the ability to repair automotive brake systems.
SLO 14 Describe theory and the operation of automotive ignition systems.
SLO 15 Diagnose automotive electronic control system concerns.
SLO 16 Diagnose engine mechanical concerns and conduct diagnostic testing procedures.
SLO 17 Demonstrate the ability to repair electronic fuel injection systems.
SLO 18 Demonstrate the ability to diagnose automatic transmission/transaxle concerns.
SLO 19 Explain theory and operations of automotive computerized controls.
SLO 20 Identify the fundamentals of automotive emission systems to include electrical, vacuum, computerized vehicle emission components, emission regulations, emission testing, emission reduction systems, and emission inspection/diagnostic equipment.

**Certificate Automotive Engine Performance
Student Learning Outcomes***

SLO 1 Recognize electronic principles and how they relate to particular automotive systems.
SLO 2 Explain the proper use of technical service publications used in the diagnostic procedure.
SLO 3 Repair automotive engine performance systems.
SLO 4 Describe theory and the operation of automotive ignition systems.
SLO 5 Diagnose automotive electronic control system concerns.
SLO 6 Diagnose engine mechanical concerns and conduct diagnostic testing procedures.
SLO 7 Understand theory and operation of electronic fuel injection.
SLO 8 Perform the necessary repair procedures for a certain set of automotive computerized control diagnostic problems.
SLO 9 Identify the fundamentals of automotive emission systems to include electrical, vacuum, computerized vehicle emission components, emission regulations, emission testing, emission reduction systems, and emission inspection/diagnostic equipment.

**Certificate – Automatic Transmissions/Transaxles
Student Learning Outcomes***

SLO 1 -Identify components and systems that require periodic inspection and/or maintenance.
SLO 2 Explain the proper use of service publications used in diagnostic procedures.
SLO 3 Recognize electronic principles and how they relate to particular automotive systems.
SLO 4 - Perform the necessary repair procedure for a certain set electrical/electronic diagnostic problems.
SLO 5 Understand the operation of clutches, manual transmissions, transaxles, transfer cases, drive shafts, and axle assemblies (powertrain).
SLO 6 Demonstrate the ability to diagnose manual powertrain concerns.
SLO 7 Understand theory and operation of automatic transmissions/transaxles.
SLO 8 -Demonstrate the ability to repair automatic transmissions/transaxles.

**Certificate – Automotive Brakes
Student Learning Outcomes***

SLO 1 Describe the fundamentals of automotive systems to include engine operation and repair, automatic transmissions/transaxles , manual drive train and axles, suspension and steering , brakes, electrical and electronic systems, heating and air conditioning, and engine performance
SLO 2 Describe the fundamentals of diagnosing automotive systems
SLO 3 -Explain how to perform fundamental diagnostic procedures as outlined in manufacture service publications.
SLO 4 Describe theory and operation of Automotive Electrical/Electronic Systems
SLO 5 Recall and apply step-by-step diagnostic procedures
SLO 6 Repair automotive electrical/electronic systems relating to Brake Systems.
SLO 7 Understand theory and operation of automotive brake systems.
SLO 8 Explain the operation of conventional, anti-lock, traction control and electronic stability assist brake systems.

SLO 9 Demonstrate the ability to repair automotive brake systems.
SLO 10 Explain theory and operations of automotive computerized controls.
SLO 11 Perform inspection, testing, disassembly, component replacement, reassembly, and confirmation of repair on automotive computerized control systems.

Certificate – Automotive Electrical Systems Student Learning Outcomes*
SLO 1 Describe the fundamentals of automotive systems to include engine operation and repair, automatic transmissions/transaxles , manual drive train and axles, suspension and steering , brakes, electrical and electronic systems, heating and air conditioning, and engine performance
SLO 2 Explain how to perform fundamental diagnostic procedures as outlined in manufacture service publications.
SLO 3 Describe theory and operation of Automotive Electrical/Electronic Systems
SLO 4 Perform the necessary repair procedure for a certain set electrical/electronic diagnostic problems.
SLO 5 Describe theory and the operation of automotive ignition systems.
SLO 6 Apply test procedures on automotive ignition systems and components
SLO 7 Describe theory and operation of Electronic Control Systems
SLO 8 Diagnose automotive electronic control system concerns
SLO 9 Explain the relationships between input sensors, processing and output sensors.
SLO 10 Perform the necessary repair procedures for a certain set of automotive computerized control diagnostic problems.

Certificate – Automotive Heating and Air Conditioning Student Learning Outcomes*
SLO 1 Describe the fundamentals of diagnosing automotive systems.
SLO 2 Explain the proper use of service publications used in diagnostic procedures.
SLO 3 Recognize electronic principles and how they relate to particular automotive systems.
SLO 4 Perform the necessary repair procedure for a certain set electrical/electronic diagnostic problems.
SLO 5 Understand the basic operation of automotive air conditioning (A/C) and engine cooling systems.
SLO 6 Repair automotive air conditioning (A/C) and cooling systems.

Certificate – Automotive Suspension and Steering Student Learning Outcomes*
SLO 1 Explain the proper use of service publications used in diagnostic procedures.
SLO 2 Recognize electronic principles and how they relate to particular automotive systems.
SLO 3 Diagnose vehicle alignment angle concerns.
SLO 4 Explain theory and operations of automotive computerized controls.

**Certificate – Automotive Emission Control
Student Learning Outcomes***

SLO 1 Recognize electronic principles and how they relate to particular automotive systems.

SLO 2 Diagnose automotive engine performance concerns.

SLO 3 Demonstrate the ability to diagnose electronic fuel injection.

SLO 4 Diagnose automotive computerized control concerns.

SLO 5 Identify the fundamentals of automotive emission systems to include electrical, vacuum, computerized vehicle emission components, emission regulations, emission testing, emission reduction systems, and emission inspection/diagnostic equipment.

**Certificate – Small Engine Repair
Student Learning Outcomes***

SLO 1 Recognize electronic principles and how they relate to particular automotive systems.

SLO 2 Perform the necessary repair procedure for a certain set electrical/electronic diagnostic problems.

SLO 3 Diagnose small engine operation concerns.

SLO 4 Assess and repair small engine systems.

SLO 5 Understand theory and operation of electronic fuel injection.

SLO 6 Demonstrate the ability to repair electronic fuel injection systems.

* Developed through the Curriculum Committee approval process.