



POS Perkins Statewide Articulation Agreement Documentation Coversheet

Student Name:									
Secondary School Name: Secondary School Address:									
CTE Program of Study: CIP # _____ CIP Program Name _____									
<div style="background-color: #e0f7fa; padding: 5px; text-align: center;"> _____ 1. CAREER AND TECHNICAL EDUCATION Technical Core Courses List Technical Core Courses only below: </div> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 15%; text-align: center; padding: 5px;">Grade 9</td> <td style="height: 40px;"></td> </tr> <tr> <td style="text-align: center; padding: 5px;">Grade 10</td> <td style="height: 40px;"></td> </tr> <tr> <td style="text-align: center; padding: 5px;">Grade 11</td> <td style="height: 40px;"></td> </tr> <tr> <td style="text-align: center; padding: 5px;">Grade 12</td> <td style="height: 40px;"></td> </tr> </table> <div style="background-color: #e0f7fa; padding: 5px; margin-top: 10px;"> Overall Grade Point Average Technical Core Courses: _____ / 4.0 Equate to GPA based on a 4.0 scale. </div> <div style="padding: 5px; margin-top: 10px;"> Send official transcript and a copy of student diploma to postsecondary institution where student is making application for admission. </div>	Grade 9		Grade 10		Grade 11		Grade 12		<div style="background-color: #e0f7fa; padding: 5px; text-align: center; margin-bottom: 10px;"> _____ 2. End of Program Assessment </div> <div style="padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">Check the appropriate certificate earned by this student on the CIP end of program assessment. (attach)</p> <p style="text-align: center;">_____ Pennsylvania Skills Certificate (or)</p> <p style="text-align: center;">_____ Pennsylvania Certificate of Competency</p> </div> <div style="background-color: #e0f7fa; padding: 5px; text-align: center; margin-bottom: 10px;"> _____ 3. Secondary Competency Task List signed by program instructor (attach) </div> <div style="background-color: #fff176; padding: 5px; text-align: center; margin-bottom: 10px;"> _____ 4. Industry Certification(s) if applicable, (attach) </div> <div style="padding: 5px;"> <p style="text-align: center;">Secondary School Representative (individual attesting to document verification)</p> <p>Signature: _____</p> <p>Print Name: _____</p> <p>Title: _____</p> <p>Date : _____</p> </div>
Grade 9									
Grade 10									
Grade 11									
Grade 12									



Perkins Statewide Articulation Agreement

Documentation item: Secondary Competency Task List Coversheet

The Secondary School agrees to:

- A. Implement the approved PDE Program(s) of Study.
- B. Provide assessment of student competencies based upon performance standards as prescribed by the approved PDE Program of Study.
- C. Furnish documentation necessary to the Postsecondary Institution upon a student's written request. Documents should be student specific and should verify that the student meets all secondary requirements of the approved PDE Program of Study.
- D. Provide documentation to the postsecondary institution that must include each of the following items, if applicable
 - High School Diploma;
 - Official Student Transcript;
 - **Secondary Competency Task List with the signature of a secondary school technical instructor;**
 - PA Certificate of Competency or PA Skills Certificate in technical program area and
 - Industry certifications earned

Student Specific Documentation: Secondary Competency Task List

The following student qualifying for articulated credit under the Perkins Statewide Articulation Agreement has achieved proficiency on all of the approved PDE Program of Study Secondary Competency Task List items. Secondary Competency Task List is attached.

Student Name: _____

Program of Study Name: _____

Program of Study CIP number: _____

Instructor's signature: _____

Instructor's Name (Print): _____

School Name: _____

School Mailing Address: _____

School telephone number: _____

Unit/Standard Number	High School Graduation Years 2020, 2021 and 2022	Proficiency Level Achieved: (X) Indicates Competency Achieved to Industry Proficiency Level
	Vehicle Maintenance Technology/Other CIP 47.0699 Task Grid	
	Secondary Competency Task List	
100	WORKPLACE SAFETY	
101	Interpret SDS Sheets.	
102	Lift and move heavy objects.	
103	Handle and store flammable materials and toxic substances.	
104	Follow OSHA rules and regulations.	
105	Identify job-site hazards.	
106	Wear personal protective equipment (safety goggles, hearing protection and respiratory protection).	
107	Select appropriate fire extinguisher according to fire type.	
108	Follow safety rules for ECP (Exposure Control Procedures) for blood borne pathogens.	
109	Use safe work habits while working with electrical systems.	
200	BASIC ELECTRICAL PRINCIPLES AND CIRCUIT TESTING	
201	RESERVED	
202	Interpret electrical circuit and wiring diagrams.	
203	Use a meter to measure resistance, continuity, amperage and voltage.	
204	Solve problems using Ohm's Law.	
205	Follow proper procedure for battery disposal.	
206	Construct and test series and parallel circuits.	
207	Identify electrical terminals and connectors.	
208	Perform a diode test.	
209	RESERVED	
210	RESERVED	
211	RESERVED	
212	Inspect, test and replace fusible links, fuses and circuit breakers.	
213	Identify American Wire Gauge (AWG) wiring codes.	
214	RESERVED	
215	Solder a current carrying wire.	
300	COOLING SYSTEMS	
301	Explain the concept of heat transfer and the purpose of a cooling system.	
302	Perform a cooling system flush on a liquid cooled engine.	
303	Remove, service and replace a water pump, hoses and thermostat.	
304	Identify and describe the components of a liquid cooled engine.	
305	Pressure-test a liquid-cooled cooling system.	

Unit/Standard Number	<u>High School Graduation Years 2020, 2021 and 2022</u> Vehicle Maintenance Technology/Other CIP 47.0699 Task Grid		Proficiency Level Achieved: (X) Indicates Competency Achieved to Industry Proficiency Level
306	Identify causes of engine overheating.		
307	Inspect the cooling system for debris, leaks and damage.		
400	FUEL SYSTEMS		
401	Identify the types of fuel systems and explain the function of each components.		
402	RESERVED		
403	Identify types of carburetor designs and their functions.		
404	RESERVED		
405	Describe the operation of the idle fuel circuit and the main fuel circuit.		
406	Explain the "venturi" principle, and variable venturi carburetors.		
407	Describe fuel enrichment devices.		
408	RESERVED		
409	RESERVED		
410	Identify the function of electronic fuel injection (EFI) components.		
411	Identify the function, and components of gaseous fuel systems.		
412	Identify types and grades of fuels used in internal combustion engines		
413	Describe how fuel additives protect fuel systems.		
414	Remove, service and replace carburetor.		
415	RESERVED		
416	Remove, service, and replace a fuel system's air filter and air intake assembly.		
417	Remove, service and replace a fuel pump.		
418	Install and adjust throttle and choke linkage.		
419	Adjust carburetor mixture screws per OEM specifications.		
420	Adjust carburetor float level and metering levers.		
421	Remove, service and replace a fuel tank, filters, caps and lines.		
422	RESERVED		
423	Check the fuel pump pressure and flow rate.		
424	Pressure test the carburetor.		
425	Check the engine for proper starting, idle and acceleration.		
426	RESERVED		
427	RESERVED		
428	Remove and replace an intake manifold.		
429	Remove, service and replace EFI fuel system components.		
430	Diagnose EFI system failures.		
431	Test and replace an antibackfire/fuel shutoff solenoid.		

Unit/Standard Number	High School Graduation Years 2020, 2021 and 2022	Proficiency Level Achieved: (X) Indicates Competency Achieved to Industry Proficiency Level
	Vehicle Maintenance Technology/Other CIP 47.0699 Task Grid	
500	EXHAUST SYSTEMS	
501	Identify equipment problems that can occur from operating equipment with a removed or damaged exhaust system.	
502	RESERVED	
503	Remove, service and replace a spark arrestor screen.	
504	Identify exhaust system components and their functions.	
505	Explain the function of a single stage catalyst (catalytic converters).	
506	RESERVED	
507	Remove, service and replace an exhaust system.	
508	RESERVED	
600	MEASURING AND TRADE RELATED MATHEMATICS	
601	Read a standard and a metric ruler	
602	Read and use a standard and metric micrometer	
603	Read and use a standard and metric dial indicator	
604	Use a standard and metric torque wrench	
605	Use a standard/metric dial caliper.	
606	Calculate displacement and horse power.	
607	Calculate work, power, torque, area and volume.	
700	HAND AND POWER TOOLS	
701	Use common hand tools used in the repair of outdoor power equipment.	
702	Use specialty tools used in the repair of outdoor power equipment.	
703	Use electric, air and hydraulic tools.	
800	FASTENERS	
801	Identify, select and install various fasteners according to specifications.	
802	Replace damaged internal threads using a thread repair system.	
803	Repair damaged threads, using a tap and die, chaser or a thread file.	
804	Use a thread extraction tool to remove a broken fastener.	
805	Torque fasteners according to manufacturer's specifications.	
900	WELDING, HEATING AND CUTTING	
901	Follow safety rules for welding and cutting equipment.	
902	RESERVED	

Unit/Standard Number	<u>High School Graduation Years 2020, 2021 and 2022</u> Vehicle Maintenance Technology/Other CIP 47.0699 Task Grid		Proficiency Level Achieved: (X) Indicates Competency Achieved to Industry Proficiency Level
903	Adjust welding amperage and perform various welding repairs.		
904	RESERVED		
905	Light and adjust the flame on an Oxy-Acetylene torch.		
906	Heat and cut with an oxy-acetylene torch.		
907	Set up and adjust gauges on welding, heating and cutting equipment.		
1000	2-STROKE CYCLE ENGINE		
1001	Diagnose performance problems in a 2-cycle gasoline engine		
1002	RESERVED		
1003	Perform top end compression test.		
1004	Perform crankcase vacuum/pressure test.		
1005	Identify the component parts in a short block of a 2-cycle engine and explain their purposes.		
1006	Pressure test a 2-stroke cycle fuel system.		
1007	Explain 2- cycle engine operating theory.		
1008	RESERVED		
1009	RESERVED		
1010	Identify the types of 2-stroke cycle valves.		
1011	Inspect and service 2-stroke cycle exhaust systems.		
1012	RESERVED		
1100	4-STROKE CYCLE ENGINE		
1101	Disassemble, clean and identify engine components.		
1102	RESERVED		
1103	Explain 4-cycle engine operating theory.		
1104	RESERVED		
1105	Inspect shaft(s) bearings and gears.		
1106	RESERVED		
1107	Measure crankshaft end play and run-out, and repair crankshaft if damaged.		
1108	Inspect and service valve train components.		
1109	RESERVED		
1110	RESERVED		
1111	RESERVED		
1112	Install valve springs using a valve spring compressor.		
1113	Adjust valve clearances/lash.		
1114	Measure cylinder bore for oversize, out of round, taper and piston to cylinder wall clearance.		

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1115	Deglaze/hone a cylinder.		
1116	Perform a cylinder balance test.		
1117	Perform a cylinder compression test.		
1118	Perform a cylinder leak-down test.		
1119	Install a crankshaft, and bearings.		
1120	Install a piston using a ring compressor.		
1121	Check ring end gap and side clearance.		
1122	Verify camshaft timing.		
1123	Install all gaskets and seals where needed, according to specifications.		
1124	RESERVED		
1125	RESERVED		
1126	RESERVED		
1200	ENGINE FAILURE ANALYSIS		
1201	List engine failure categories.		
1202	Identify insufficient lubrication failures.		
1203	Identify fuel system failures.		
1204	Identify cooling system failures.		
1205	Identify detonation and pre-ignition failures.		
1206	RESERVED		
1207	Identify the effects of over speeding.		
1208	Identify the signature "breakage" of a connecting rod.		
1209	Identify exhaust port piston scoring and large end bearings failure on a 2-Stroke cycle engine.		
1210	Identify the effects of excessing vibration on engine block and mounting base.		
1211	RESERVED		
1300	STARTING SYSTEMS		
1301	Disassemble, identify and describe the parts of a recoil starting system.		
1302	RESERVED		
1303	Replace a starter spring, pulley and starter rope.		
1304	RESERVED		
1305	Troubleshoot and repair a starting / safety interlock circuit.		
1306	Remove, service and replace a Direct Current starter.		
1307	Remove, service and replace and Alternating Current starter.		
1308	Identify and describe the components of a DC starting system.		

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1309	Perform a 12-volt DC starter motor current draw test.		
1310	Remove, test and replace a starter relay or solenoid.		
1400	IGNITION SYSTEM		
1401	Identify, remove, service and replace battery ignition system components		
1402	Identify, remove, service and replace electronic ignition system components.		
1403	RESERVED		
1404	Check and set ignition timing/air gap.		
1405	RESERVED		
1406	Test an ignition system using a spark tester.		
1407	Inspect the engine for a sheared flywheel key.		
1408	Remove, inspect and replace points and condenser.		
1409	RESERVED		
1410	Replace a spark plug terminal and boot.		
1411	Test the solid-state transistor-controlled discharge system.		
1412	Test a capacitive discharge ignition system.		
1413	RESERVED		
1414	Perform timing procedures on an engine with a solid state/ electronic ignition system.		
1415	RESERVED		
1416	Replace an engine ignition kill switch.		
1500	CHARGING SYSTEMS		
1501	Explain battery theory and perform maintenance and storage procedures.		
1502	Identify and describe the function of charging system components.		
1503	Perform a current draw test.		
1504	Test and troubleshoot the components of a charging system		
1505	RESERVED		
1506	RESERVED		
1507	RESERVED		
1508	Remove and replace charging system components.		
1600	LUBRICATION SYSTEM		
1601	RESERVED		
1602	RESERVED		
1603	Change engine oil and filter on a variety of equipment.		

Unit/Standard Number	<u>High School Graduation Years 2020, 2021 and 2022</u> Vehicle Maintenance Technology/Other CIP 47.0699 Task Grid		Proficiency Level Achieved: (X) Indicates Competency Achieved to Industry Proficiency Level
1604	Select proper oil and grade utilizing application charts.		
1605	Prepare a fuel/oil mixture for a 2-Stroke cycle engine.		
1606	Service a crankcase breather assembly.		
1607	Describe lubrication systems and their functions.		
1608	Interpret API oil ratings and SAE viscosity ratings.		
1609	Describe the standard classification of 2-cycle oils.		
1610	List common oil contaminants.		
1611	Describe differences between splash lubrication systems and a pressure lubrication system.		
1612	Describe the operation of various oil filtration system.		
1613	Describe methods of checking the oil level in an engine.		
1614	RESERVED		
1615	Identify the components and function of a crankcase ventilation breather assembly		
1616	Perform an oil pressure test.		
1617	Inspect a low-oil alert system.		
1700	GOVERNOR SYSTEMS		
1701	Perform static and dynamic governor adjustments.		
1702	Remove, service, and replace pneumatic and mechanical governor.		
1703	Check top no-load speed adjust governor as needed.		
1704	Differentiate hunting/surging symptom between the fuel system and governor system.		
1800	BRAKE SYSTEMS		
1801	Inspect, remove, service and repair mechanical brake systems.		
1802	Inspect, remove, service and repair hydraulic brake systems.		
1803	Inspect, remove service and repair drum and disc brakes.		
1804	Explain hydraulic brake theory.		
1805	RESERVED		
1900	CLUTCH AND DRIVE SYSTEM		
1901	Inspect, service or replace belts and tensioning devices.		
1902	Inspect, service or replace centrifugal clutches.		
1903	Inspect, service or replace clutch discs.		
1904	Inspect, service or replace sprockets and chains.		
1905	Inspect, service or replace an electric power take-off.		
1906	Inspect, service or replace universal joints.		

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1907	Disassemble, service and reassemble gearboxes and components		
1908	Disassemble, service and reassemble transaxles.		
1909	Disassemble, service and reassemble hydrostatic drives.		
1910	Change hydraulic fluid and filter.		
2000	PARTS MANAGEMENT, INVOICING AND RECORDKEEPING		
2001	Interpret illustrations, graphs, diagrams, and tables.		
2002	Use reference materials, service manuals, and parts tables.		
2003	Perform inventory of parts in stock.		
2004	Locate parts and specifications using a computerized or microfiche parts reference database.		
2005	Complete a service order/invoice form.		
2006	Interpret time and flat rate information.		
2007	Order materials and supplies.		
2008	Explain a manufacturer's model number, serial number, engine type number and Vehicle Identification numbers (VIN).		
2100	WHEELS AND CHASSIS SERVICE		
2101	Remove, replace or repair tubeless tire and valve stem.		
2102	Remove, replace or repair a tube type tire.		
2103	Service and replace wheel bearings and bushings.		
2104	Inspect, service and replace steering components.		
2105	Inspect, service and repair chassis.		