

High School Name:
Community College Name:
CTE Program of Study Name:
Date:

Hillsboro High School
Portland Community College
Automotive
2/24/2017

Automotive & Heavy Equipment Technology
Cluster

Skills-to-Course Matrix

Instructions: 1) Enter your high school name above. 2) Enter the community college name. 3) Enter the Program of Study name. 4) Enter the date. 5) Click on Course 1, Course 2, etc. below and replace with your POS course names (or numbers). 6) Check those courses that trigger the TSA for this POS. 7) Finally, check those standards that are taught with intent and purpose, and are assessed in each course. Note: You only need to use the optional Focus Area tabs below if you are using those skill sets for multiple options in a Program of Study or if you want to use another set of industry validated standards.

Cluster Knowledge and Skills (CTE standards)

CCTC	Code Number	KS Statement	Automotive TSA?	Automotive TSA?	Automotive TSA?	Automotive TSA?	Automotive TSA?	Yes	Course 6 TSA?
	AH01	Use Mathematics in the service and repair of automobiles or heavy equipment.	x	x	x	x	x		
	AH02	Understand the application of the principles of science used in modern automobiles or heavy equipment.	x	x	x	x	x		
	AH03	Use communication skills to service and repair automobiles or heavy equipment.	x	x	x	x	x		
	AH04	Identify and use sources of service information used in the service and repair of automobiles or heavy equipment.	x	x	x	x	x		
	AH05	Use vehicle identification information in the service and repair of automobiles or heavy equipment.	x	x	x	x	x		
	AH06	Use problem solving and critical thinking skills when diagnosing, servicing, and repairing automobiles or heavy equipment.	x	x	x	x	x		
	AH07	Use information technology (IT) resources for the repair and service of automobiles or heavy equipment.	x	x	x	x	x		
	AH08	Describe the concept of multiple components connected and operating in a system.	x	x	x	x	x		
	AH09	Describe the design and operation of the systems and subsystems in modern automobiles or heavy equipment.	x	x	x	x	x		
	AH10	Develop and practice safe working habits while servicing and repairing automobiles or heavy equipment.	x	x	x	x	x		
	AH11	Develop and practice EPA (Environmental Protection Agency) acceptable practices when dealing with hazardous and nonhazardous wastes in the service and repair of automobiles or heavy equipment.	x	x	x	x	x		
	AH12	Practice leadership traits and habits in the workplace.			x	x			
	AH13	Demonstrate teamwork in the service and repair of automobiles or heavy equipment.	x	x	x	x	x		
	AH14	Understand and practice ethical work habits when working with customers, managers, and peers in the service and repair of automobiles or heavy equipment.				x	x		
	AH15	Follow legal responsibilities when working with safety systems on automobiles or heavy equipment.			x	x	x		
	AH16	Understand legal driving requirements in the repair and service of automobiles or heavy equipment.				x	x		
	AH17	Understand the liability issues related to repairs made to customer's automobiles or heavy equipment.					x		
	AH18	Develop materials and practice the skills necessary for successful employment interviews.					x		
	AH19	Describe various workplace characteristics of automotive or heavy equipment related career areas.				x	x		
	AH20	Describe potential career advancement opportunities for automotive or heavy equipment careers.				x	x		
	AH21	Demonstrate the safe and proper use of tools needed for the service and repair of automobiles or heavy equipment.	x	x	x	x	x		
	AH22	Practice professionalism with customers' vehicles or equipment during the service of automobiles or heavy equipment.				x	x		
	AH23	Identify the different payment systems for employee pay and customer billing in the service and repair of automobiles or heavy equipment.							
	AH24	Analyze tool costs related to the service and repair of automobiles or heavy equipment.							

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Automotive Service Technology Focus Area

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Focus Area Knowledge and Skills (CTE standards)

CCTC	Code Number	KS Statement	Automotive TSA?	Automotive TSA?	Automotive TSA?	Automotive TSA?	Automotive YES	Course 6 TSA?
	AHAS01	Perform Lube, Oil, and Filter (LOF) and preventive maintenance needed for entry level employment of the automobile service and repair field.	X				X	
	AHAS02	Perform skills and determine necessary actions needed in the automatic transmission area of automotive service and repair.		X		X	X	
	AHAS03	Perform skills and determine necessary actions needed in the manual drive train and axles area of automotive service and repair.			X		X	
	AHAS04	Perform skills and determine necessary actions needed in the suspension and steering area of automotive service and repair.	X		X		X	
	AHAS05	Perform skills and determine necessary actions needed in the brakes area of automotive service and repair.	X				X	
	AHAS06	Perform skills and determine necessary actions needed in the electrical/electronic systems area of automotive service and repair.				X	X	
	AHAS07	Perform skills and determine necessary actions needed in the engine performance area of automotive service and repair.		X			X	
	AHAS09	Perform skills and determine necessary actions needed in the engine repair area of automotive service and repair.			X		X	
	AHAS10	Perform skills and determine necessary actions needed in the heating and air conditioning area of automotive service and repair.		X			X	
	AHAS11	Perform specialized skills and determine necessary actions needed in the automatic transmission area of automotive service and repair.			X		X	
	AHAS12	Perform specialized skills and determine necessary actions needed in the manual drive train and axles area of automotive service and repair.				X	X	
	AHAS13	Perform specialized skills and determine necessary actions needed in the engine repair area of automotive service and repair.				X	X	

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Collision Repair & Refinishing Focus Area

2016

Skills-to-Course Matrix

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Focus Area Knowledge and Skills (CTE standards)

			Course 1	Course 2	Course 3	Course 4	Course 5	Course 6
CCTC	Code Number	KS Statement	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?
	AHRR01	Conduct frame inspection and repair.						
	AHRR02	Conduct unibody and unitized structure inspection, measurement, and repair.						
	AHRR03	Remove and install fixed glass.						
	AHRR04	Conduct metal welding and cutting for structural damage repair.						
	AHRR05	Prepare body components for non-structural damage repair.						
	AHRR06	Conduct outer body panel repairs, replacements, and adjustments.						
	AHRR07	Conduct metal finishing and body filling.						
	AHRR08	Inspect and repair moveable glass and hardware.						
	AHRR09	Conduct metal welding and cutting for non-structural damage repair.						
	AHRR10	Repair and replace plastics.						
	AHRR11	Repair or replace suspension and steering components.						
	AHRR12	Repair or replace electrical components.						
	AHRR13	Repair or replace brakes.						
	AHRR14	Repair or replace heating and air conditioning components.						
	AHRR15	Repair or replace cooling systems.						
	AHRR16	Repair or replace drive train components.						
	AHRR17	Repair or replace fuel, intake, and exhaust system components.						
	AHRR18	Inspect and replace restraint systems.						
	AHRR19	Understand safety precautions related to painting and refinishing.						
	AHRR20	Conduct surface preparation for painting and refinishing.						
	AHRR21	Understand proper operation of spray guns and related equipment.						
	AHRR22	Mix, match, and apply paint.						
	AHRR23	Understand causes and cures associated with paint defects.						
	AHRR24	Conduct final detailing related to painting and refinishing.						

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Heavy Equipment Service Technology Focus Area

2016

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Focus Area Knowledge and Skills (CTE standards)								
CCTC	Code Number	KS Statement	Course 1 TSA?	Course 2 TSA?	Course 3 TSA?	Course 4 TSA?	Course 5 TSA?	Course 6 TSA?
	TRHV01	Conduct general inspection, maintenance, and repair on diesel engines.						
	TRHV02	Conduct cylinder head and valve train inspection, maintenance, and repair on diesel engines.						
	TRHV03	Conduct engine block inspection, maintenance, and repair on diesel engines.						
	TRHV04	Conduct lubrication system inspection, maintenance, and repair on diesel engines.						
	TRHV05	Conduct cooling system inspection, maintenance, and repair on diesel engines.						
	TRHV06	Conduct air induction and exhaust system inspection, maintenance, and repair on diesel engines.						
	TRHV07	Conduct fuel supply system inspection, maintenance, and repair on diesel engines.						
	TRHV08	Conduct electronic fuel management system inspection, maintenance, and repair on diesel engines.						
	TRHV09	Conduct engine brake inspection, maintenance, and repair on diesel engines.						
	TRHV10	Conduct clutch inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV11	Conduct transmission inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV12	Conduct driveshaft and universal joint inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV13	Conduct drive axle inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV14	Conduct air supply and service systems inspection, maintenance, and repair on truck air brakes.						
	TRHV15	Conduct basic mechanical inspection, maintenance, and repair on truck air brakes.						
	TRHV16	Conduct parking brake inspection, maintenance, and repair on truck air brakes.						
	TRHV17	Conduct hydraulic systems inspection, maintenance, and repair on truck hydraulic brakes.						
	TRHV18	Conduct basic mechanical inspection, maintenance, and repair on truck hydraulic brakes.						
	TRHV19	Conduct power assist unit inspection, maintenance, and repair on truck hydraulic brakes.						
	TRHV20	Conduct air and hydraulic ABS and ATC inspection, maintenance, and repair on truck brakes.						
	TRHV21	Conduct wheel bearing inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV22	Conduct steering column inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV23	Conduct steering unit inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV24	Conduct steering linkage inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV25	Conduct suspension system inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV26	Conduct wheel alignment diagnosis, adjustment, and repair on medium and heavy trucks.						
	TRHV27	Conduct wheel inspection and diagnosis on medium and heavy trucks.						
	TRHV28	Conduct frame and coupling device inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV29	Conduct general electrical system inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV30	Conduct battery inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV31	Conduct starting system inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV32	Conduct charging system diagnosis and repair on medium and heavy trucks.						
	TRHV33	Conduct lighting system inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV34	Conduct gauge and warning device inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV35	Conduct related electrical system inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV36	Conduct general HVAC system inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV37	Conduct general A/C system inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV38	Conduct A/C system compressor and clutch inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV39	Conduct evaporator, condensor, and related components inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV40	Conduct heating and engine cooling system inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV41	Conduct HVAC electrical operating system inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV42	Conduct HVAC air/mechanical operating system inspection, maintenance, and repair on medium and heavy trucks.						
	TRHV43	Conduct refrigerant recovery, recycling, and handling in accordance with appropriate EPA regulations.						