Skills-to-Course Matrix

Mechanical Technology

Tigard High School
Portland Community College
Mar-19

Automotive & Heavy Equipment Cluster

Instructions: 1) Enter the Program of Study name above. 2) Enter your high school name. 3) Enter the community college name. 4) Enter the date. 5) Click on the cell for Course 1 Name, Course 2 Name, etc., and replace with your POS course names-secondary and first year of post-secondary. 6) Enter school course numbers. 7) Enter NCES code for the course (secondary only). 8) Enter number of credits awarded. 9) Identify those courses that trigger the TSA for this POS. 10) Finally, check those standards that are taught with intent and purpose, and are assessed in each course. Note: The optional Focus Area tabs below are included for those POSs that have a very specific industry fociusare using those skill sets for multiple options in a Progam of Study or if you want to use another set of industry validated standards.

Course Warnel Course 2 Warnel Course 3 Warnel Course 4 Warnel Course 5 Warnel Course 6 Warnel Course 7 Warnel Course 8 Warnel Course 9 Warnel Course 10 Warnel

			[Course Number]									
			[NCES Code]									
		ter Knowledge and Skills (CTE standards)	[# of Credits]									
CCTC*	Code Number	KS Statement	[TSAY or N?]									
	AH01	Use Mathematics in the service and repair of automobiles or heavy equipment.										
	AH02	Understand the application of the principles of science used in modern										
		automobiles or heavy equipment.										
	AH03	Use communication skills to service and repair automobiles or heavy equipment.										
	AH04	Identify and use sources of service information used in the service and repair of automobiles or heavy equipment.										
	AH05	Use vehicle identification information in the service and repair of automobiles or heavy equipment.										
	AH06	Use problem solving and critical thinking skills when diagnosing, servicing, and repairing automobiles or heavy equipment.										
	AH07	Use information technology (IT) resources for the repair and service of automobiles or heavy equipment.										
	AH08	Describe the concept of multiple components connected and operating in a system.										
	AH09	Describe the design and operation of the systems and subsystems in modern automobiles or heavy equipment.										
	AH10	Develop and practice safe working habits while servicing and repairing automobiles or heavy equipment.										
	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.										
1	AH12	Practice leadership traits and habits in the workplace.										
	AH13	Demonstrate teamwork in the service and repair of automobiles or heavy equipment.										
	AH14	Understand and practice ethical work habits when working with customers,										
		managers, and peers in the service and repair of automobiles or heavy equipment.										
	AH15	Follow legal responsibilities when working with safety systems on automobiles or heavy equipment.										
	AH16	Understand legal driving requirements in the repair and service of automobiles or heavy equipment.										
	AH17	Understand the liability issues related to repairs made to customer's automobiles or heavy equipment.										
	AH18	Develop materials and practice the skills necessary for successful employment interviews.										
	AH19	Describe various workplace characteristics of automotive or heavy equipment related career areas.										
	AH20	Describe potential career advancement opportunities for automotive or heavy equipment careers.										
	AH21	Demonstrate the safe and proper use of tools needed for the service and repair of automobiles or heavy equipment.										
	AH22	Practice professionalism with customers' vehicles or equipment during the service of automobiles or heavy equipment.										
	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.										

Skills-to-Course Matrix

Mechanical Technology

Tigard High School
Portland Community College
Mar-19

Automotive Service Technology Focus Area

<u>Instructions</u>: 1) Enter the Program of Study name above. 2) Enter your high school name. 3) Enter the community college name. 4) Enter the date. 5) Click on the cell for Cour secor NCES Identi

ourse 1 [°] I econdary CES cod	Name, Course 2 and first year of e for the course	unity college name. 4) Enter the date. 5) Click on the cell for Name, etc., and replace with your POS course namesf post-secondary. 6) Enter school course numbers. 7) Enter (secondary only). 8) Enter number of credits awarded. 9)			actron	nic ⁵	orman	çe Odlica	tion			•
tandards ote: The pecific ind	that are <u>taught v</u> optional Focus <i>i</i> dustry fociusare	trigger the TSA for this POS. 10) Finally, check those with intent and purpose, and are assessed in each course. Area tabs below are included for those POSs that have a very using those skill sets for multiple options in a Progam of another set of industry validated standards.	Auto Tech 1	Auto Tech?	Auto ElectricalEle	Auto Engine Repo	Auto Engine Perto	Advanced Auto Ar	(Course Thame)	(Course 8 Name)	(Course of Marine)	(Course 10 Marne)
			20103	20105	20105E	20104ER	20104EP	20104	[Course Number]	[Course Number]	[Course Number]	[Course Number]
			20103	20105	20105	20104	20104	20104	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]
	Focus Area	a Knowledge and Skills (CTE standards)	0.5	0.5	0.5	0.5	0.5	0.5	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]
сстс*	Code Number	KS Statement	N	N	N	N	Υ	N	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]
	AHAS01	Perform Lube, Oil, and Filter (LOF) and preventive maintenance needed for entry level employment of the automobile service and repair field.	х									
	AHAS02	Perform skills and determine necessary actions needed in the automatic transmission area of automotive service and repair.						Х				
	AHAS03	Perform skills and determine necessary actions needed in the manual drive train and axles area of automotive service and repair.						Х				
	AHAS04	Perform skills and determine necessary actions needed in the suspension and steering area of automotive service and repair.		Х								
	AHAS05	Perform skills and determine necessary actions needed in the brakes area of automotive service and repair.		Х								
	AHAS06	Perform skills and determine necessary actions needed in the electrical/electronic systems area of automotive service and			х							
	AHAS07	Perform skills and determine necessary actions needed in the engine performance area of automotive service and repair.					Х					
	AHAS09	Perform skills and determine necessary actions needed in the engine repair area of automotive service and repair.				Х						
	AHAS10	Perform skills and determine necessary actions needed in the heating and air conditioning area of automotive service and repair.						Х				
	AHAS11	Perform specialized skills and determine necessary actions needed in the automatic transmission area of automotive service and repair.						Х				
	AHAS12	Perform specialized skills and determine necessary actions needed in the manual drive train and axles area of automotive service and repair.						Х				
	AHAS13	Perform specialized skills and determine necessary actions needed in the engine repair area of automotive service and repair.			х							
	-		•	•	•	-			•	•		

Skills-to-Course Matrix

Mechanical Technology

Tigard High School
Portland Community College
Mar-19

Code Number

AHRR01

AHRR02

AHRR03

AHRR04

AHRR05

AHRR06

AHRR07

AHRR08

AHRR09

AHRR10

AHRR11

AHRR12

AHRR13

AHRR14

AHRR15

AHRR16

AHRR17

AHRR18

AHRR19

AHRR20

AHRR21

AHRR22

AHRR23

AHRR24

CCTC*

Collision Repair & Refinishing Focus Area

Instructions: 1) Enter the Program of Study name above. 2) Enter your high school name. 3) Enter the community college name. 4) Enter the date. 5) Click on the cell for Course 1 Name, Course 2 Name, etc., and replace with your POS course names--secondary and first year of post-secondary. 6) Enter school course numbers. 7) Enter NCES code for the course (secondary only). 8) Enter number of credits awarded. 9) Identify those courses that trigger the TSA for this POS. 10) Finally, check those standards that are taught with intent and purpose, and are assessed in each course. Note: The optional Focus Area tabs below are included for those POSs that have a very specific industry fociusare using those skill sets for multiple options in a Progam of Study or if you want to use another set of industry validated standards.

Focus Area Knowledge and Skills (CTE standards)

Conduct metal welding an cutting for structural damage repair.

Prepare body components for non-structural damage repair.

Conduct outer body panel repairs, replacements, and adjustments.

Conduct metal welding and cutting for non-structural damage repair.

Conduct frame inspection and repair.

Conduct metal finishing and body filling.

Repair or replace electrical components.

Repair or replace drive train components.

Inspect and replace restraint systems.

Repair or replace cooling systems.

Mix, match, and apply paint.

Inspect and repair moveable glass and hardware.

Repair or replace suspension and steering components.

Repair or replace heating and air conditioning components.

Repair or replace fuel, intake, and exhaust system components.

Understand safety precautions related to painting and refinishing.

Understand proper operation of spray guns and related equipment.

Conduct surface preparation for painting and refinishing.

Conduct final detailing related to painting and refinishing.

Understand causes and cures associated with paint defects.

Remove and install fixed glass.

Repair and replace plastics.

Repair or replace brakes.

KS Statement

Conduct unibody and unitized structure inspection, measurement, and repair.

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	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]
	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]
	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]

Skills-to-Course Matrix

Mechanical Technology

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Mar-19

Heavy Equipment Service Technology Focus Area

Instructions: 1) Enter the Program of Study name above. 2) Enter your high school name. 3) Enter the community college name. 4) Enter the date. 5) Click on the cell for Course 1 Name, Course 2 Name, etc., and replace with your POS course names-secondary and first year of post-secondary. 6) Enter school course numbers. 7) Enter NCES code for the course (secondary only). 8) Enter number of credits awarded. 9) Identify those courses that trigger the TSA for this POS. 10) Finally, check those standards that are taught with intent and purpose, and are assessed in each course. Note: The optional Focus Area tabs below are included for those POSs that have a very specific industry fociusare using those skill sets for multiple options in a Progam of Study or if you want to use another set of industry validated standards.

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u	Course 1 Me	(Course 2 Me	(Course 3 Me	(Course a Me	Course 5 Me	(Course 6 Me	(Course 1 Me	(Course & Me	(Course 9 Me	Contre 10,
	[Course Number]									

			[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]
			[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]
	Госил Ан	on Knowledge and Chille (CTF standards)	<u> </u>	- -		<u> </u>	 	 	- -	 	 	
		ea Knowledge and Skills (CTE standards)	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]
CCTC*	Code Number	KS Statement	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]
	TRHV01	Conduct general inspection, maintenance, and repair on										
		diesel engines.										1
	TRHV02	Conduct cylinder head and valve train inspection,										
	1	maintenance, and repair on diesel engines.										1
	TRHV03	Conduct engine block inspection, maintenance, and repair										
	IKIIVUS											1
	TD11\/04	on diesel engines.									 	
	TRHV04	Conduct lubrication system inspection, maintenance, and										1
		repair on diesel engines.										
	TRHV05	Conduct cooling system inspection, maintenance, and repair										1
		on diesel engines.										
	TRHV06	Conduct air induction and exhaust system inspection,										1
		maintenance, and repair on diesel engines.										<u> </u>
	TRHV07	Conduct fuel supply system inspection, maintenance, and										
		repair on diesel engines.										1
	TRHV08	Conduct electronic fuel management system inspection,										
		maintenance, and repair on diesel engines.										1
	TRHV09	Conduct engine brake inspection, maintenance, and repair										
	11111103	on diesel engines.										1
	TRHV10	Conduct clutch inspection, maintenance, and repair on										
	IKHVIO											1
	TD11\/1.1	medium and heavy trucks.										
	TRHV11	Conduct transmission inspection, maintenance, and repair										1
		on medium and heavy trucks.										
	TRHV12	Conduct driveshaft and universal joint inspection,										1
		maintenance, and repair on medium and heavy trucks.										
	TRHV13	Conduct drive axle inspection, maintenance, and repair on										1
		medium and heavy trucks.										
	TRHV14	Conduct air supply and service sytems inspection,										
		maintenance, and repair on truck air brakes.										1
	TRHV15	Conduct basic mechanical inspection, maintenance, and										
	1	repair on truck air brakes.										1
	TRHV16	Conduct parking brake inspection, maintenance, and repair										
	111111111	on truck air brakes.										1
	TRHV17	Conduct hydraulic systems inspection, maintenance, and										
	I KUVI7											1
	TD11)/10	repair on truck hydraulic brakes.										
	TRHV18	Conduct basic mechanical inspection, maintenance, and										1
		repair on truck hydraulic brakes.										
	TRHV19	Conduct power assist unit inspection, maintenance, and										1
		repair on truck hydraulic brakes.										
	TRHV20	Conduct air and hydraulic ABS and ATC inspection,										1
		maintenance, and repair on truck brakes.										
	TRHV21	Conduct wheel bearing inspection, maintenance, and repair										1
		on medium and heavy trucks.										1
	TRHV22	Conduct steering column inspection, maintenance, and										
		repair on medium and heavy trucks.										
	TRHV23	Conduct steering unit inspection, maintenance, and repair										
	11111123	on medium and heavy trucks.										
	TRHV24	Conduct steering linkage inspection, maintenance, and										
	111111111111111111111111111111111111111										1	1
	TDLNAS	repair on medium and heavy trucks.									 	
	TRHV25	Conduct suspension system inspection, maintenance, and									1	1
		repair on medium and heavy trucks.					-				 	1
	TRHV26	Conduct wheel alignment diagnosis, adjustment, and repair									1	1
		on medium and heavy trucks.										
	TRHV27	Conduct wheel inspection and diagnosis on medium and									1	1
		heavy trucks.										
	TRHV28	Conduct frame and coupling device inspection,				<u> </u>		<u> </u>			1	_
		maintenance, and repair on medium and heavy trucks.				<u> </u>	<u> </u>	<u> </u>				<u> </u>

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 medicum					
	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 componenets					
	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.					