### **Skills-to-Course Matrix**

### **Automotive Technology**

Aloha 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 an NCES code Identify those standards tha Note: The op specific indus or if you want

		irse 2 Name, etc., and replace with your POS course names		. N	<b>.</b> ∿							
	-	ear of post-secondary. 6) Enter school course numbers. 7) Enter	AUTO MECHANICS IT	ECH TO MECHANICS T	ęc'r							
		ourse (secondary only). 8) Enter number of credits awarded. 9)	a sit	· s <sup>^</sup>	.*							•
_		s that trigger the TSA for this POS. 10) Finally, check those	MIC	MIC					ne)	ne)	ne)	amel
		ught with intent and purpose, and are <u>assessed</u> in each course.	CHA	CHA	c <sub>H</sub>	c <sub>H</sub>	cHII.	CHI	Hall	Hall	Hall	" Hys.
		ocus Area tabs below are included for those POSs that have a very	MEC	ME	1 TEN	TEO	AEO.	TEO	رو <sup>م .</sup>	<u>,</u> δ'	ζ8 <sup>9</sup> .	ومرا
		usare using those skill sets for multiple options in a Progam of Study	.KO.	.Ko.	.10	.10	.10	.10	OUTS	Ours	Ours	OUTS
or if you	want to use	another set of industry validated standards.	<b>P</b> D	A <sup>C</sup>	A)	<b>P</b> D	A)	A)	,Çυ	Ç	Ç	Ç
			A571X	A572X	A5811	A5812	A5821	A5822	[Course Number]	[Course Number]	[Course Number]	[Course Number]
			20104	20104	20104	20104	20104	20104	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]
	Clus	ster Knowledge and Skills (CTE standards)	0.5	0.5	2	2	2	2	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]
				+	2	+			<del>                                     </del>			
	Code Number	KS Statement	N	N	у	Y	n	n	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]
ŀ	AH01	Use Mathematics in the service and repair of automobiles or heavy equipment.	<i>(</i>	Y	Y	l <sub>v</sub>	Y	Y			!	
	AH02	Understand the application of the principles of science used in modern	·		<u> </u>			<u> </u>				
ľ	71102	automobiles or heavy equipment.			Х	X	Х	Х			!	
	AH03	Use communication skills to service and repair automobiles or heavy equipment.										
		X	<u> </u>	х	х	Х	х	х		<b></b>		<b></b>
	AH04	Identify and use sources of service information used in the service and repair of	/	l <sub>v</sub>	V	l <sub>v</sub>	l <sub>v</sub>	V		1	1	1
	AH05	automobiles or heavy equipment.  Use vehicle identification information in the service and repair of automobiles or	<u> </u>	^	^	^	^	^		<del> </del>		
ľ	VI 103	heavy equipment.	(	x	x	x	x	x		1	1	1
	AH06	Use problem solving and critical thinking skills when diagnosing, servicing, and	<u>:</u>									
		repairing automobiles or heavy equipment.	(	Х	Х	X	Х	Х				
	AH07	Use information technology (IT) resources for the repair and service of									!	
	41100	automobiles or heavy equipment.			X	X	X	X				
ľ	AH08	Describe the concept of multiple components connected and operating in a			Y	v	Y	v			!	
	AH09	System.  Describe the design and operation of the systems and subsystems in modern			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Λ	^				
ľ	A1105	automobiles or heavy equipment.		x	x	X	x	x			!	
	AH10	Develop and practice safe working habits while servicing and repairing										
		automobiles or heavy equipment.	(	Х	Х	Х	Х	Х				
		Develop and practice EPA (Environmental Protection Agency) acceptable									!	
		practices when dealing with hazardous and nonhazardous wastes in the service		Y	Y	v	Y	v			!	
		Practice leadership traits and habits in the workplace.	<u>·</u>	Y Y	Y Y	y y	Y Y	Y Y				
		Demonstrate teamwork in the service and repair of automobiles or heavy	<u>'</u>	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Λ	^				
ľ		equipment.	(	x	x	x	x	x			!	
		Understand and practice ethical work habits when working with customers,										
		managers, and peers in the service and repair of automobiles or heavy									!	
		equipment.	<u>.</u>	X	Х	Х	X	Х		<b></b>		
		Follow legal responsibilities when working with safety systems on automobiles or			v	v	v	V			!	
		heavy equipment.  Understand legal driving requirements in the repair and service of automobiles or			^	^	^	^		<del> </del>	<del> </del>	
ľ		heavy equipment.	(	x	х	X	x	x			!	
	AH17	Understand the liability issues related to repairs made to customer's automobiles									,	
		or heavy equipment.	(	Х	Х	Х	Х	Х				
	AH18	Develop materials and practice the skills necessary for successful employment			V	l <sub>v</sub>	l <sub>v</sub>	V		1	1	1
	AH19	Interviews.		+	Λ	\ <u>\</u>	Λ	Λ	+	<del> </del>	<del>                                     </del>	<del> </del>
ľ	ДПΙЭ	Describe various workplace characteristics of automotive or heavy equipment related career areas.			x	lx	x	x		1	1	1
	AH20	Describe potential career advancement opportunities for automotive or heavy			<u> </u>	1	1	1	1			
		equipment careers.			Х	X	Х	Х				
-	AH21	Demonstrate the safe and proper use of tools needed for the service and repair	,									
		of automobiles or heavy equipment.	<u>k</u>	X	X	X	X	X		<del>                                     </del>	<u> </u>	1
ļ	AH22	Practice professionalism with customers' vehicles or equipment during the	(	Y .	Y .	l <sub>x</sub>	l <sub>Y</sub>	Y .		1	1	1
	AH23	service of automobiles or heavy equipment.  Identify the different payment systems for employee pay and customer billing in	•	I <sup>A</sup>	I <sup>A</sup>	^	IA	I <sup>A</sup>		<del>                                     </del>	-	1
ľ		the service and repair of automobiles or heavy equipment.			x	x	x	x		1	1	1
	AH24	Analyze tool costs related to the service and repair of automobiles or heavy										
		equipment.										

### **Skills-to-Course Matrix**

# **Automotive Technology**

Aloha High School Portland Community College Mar-19

### **Automotive Service Technology Focus Area**

Instructions: 1) Enter the Program of Study name above. 2) Enter your high school Course second NCES standa Note: specific Study of

urse 1 Nondary ES code ntify tho ndards to e: The ocitic indi	lame, Course 2 and first year of a for the course se courses that hat are taught optional Focus austry fociusare	nunity college name. 4) Enter the date. 5) Click on the cell for Name, etc., and replace with your POS course names f post-secondary. 6) Enter school course numbers. 7) Enter (secondary only). 8) Enter number of credits awarded. 9) t 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 Mechanics Tech		Auto Tech 1	Auto Tech 1	Auto Tech II	Auto Tech II	(Course 1 Warne)	(Course a Marne)	(Course of Marie)	(Course to Marne)
			A571X	A572X	A5811	A5812	A5821	A5822	[Course Number]	[Course Number]	[Course Number]	[Course Number]
			20104	20104	20104	20104	20104	20104	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]
	Focus Are	a Knowledge and Skills (CTE standards)	0.5	0.5	2	2	2	2	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]
сстс*	Code Number	KS Statement	n	n	у	у	n	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	V	V	v	V	V	V				
	AHAS02	automobile service and repair field.  Perform skills and determine necessary actions needed in the	Χ	Χ	X	Χ	^	X				
		automatic transmission area of automotive service and repair.										
		automatic transmission area of automotive service and repair.			Х	Χ	Х	Х				
	AHAS03	Perform skills and determine necessary actions needed in the										
		manual drive train and axles area of automotive service and			v		V	V				
	AHAS04	renair. Perform skills and determine necessary actions needed in the			X	X	X	X				
	АПАЗО4	suspension and steering area of automotive service and repair.										
		suspension and steering area of automotive service and repair.			Х	X	X	X				
	AHAS05	Perform skills and determine necessary actions needed in the										
		brakes area of automotive service and repair.			Х	X	X	X				
	AHAS06	Perform skills and determine necessary actions needed in the					Х	Χ				
	AHAS07	Perform skills and determine necessary actions needed in the										
		engine performance area of automotive service and repair.						V				
	AHAS09	Perform skills and determine necessary actions needed in the					^	^				
	A11A303	engine repair area of automotive service and repair.				x	x	х				
	AHAS10	Perform skills and determine necessary actions needed in the										
		heating and air conditioning area of automotive service and										
	A11AC11	renair.					X	X				
	AHAS11	Perform specialized skills and determine necessary actions										
		needed in the automatic transmission area of automotive service and repair.					x	х				
	AHAS12	Perform specialized skills and determine necessary actions										
		needed in the manual drive train and axles area of automotive										
	1	service and renair.			Х	X	Х	X				
	AHAS13	Perform specialized skills and determine necessary actions										
		needed in the engine repair area of automotive service and		x	x	x	x	x				
		renair.		<u> ^</u>	<u> </u>				l	L		

#### **Skills-to-Course Matrix**

### **Automotive Technology**

Aloha High School Portland Community College Mar-19

### **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.

(Course 1 Warne)	(Course 2 Marne)	(Course 3 Warne)	(Course a Warre)	(Course & Warne)	(Course 6 Name)	(Course 1 Warne)	(Course 8 Name)	(Course 9 Name)	(Course to Marie)
[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]				
[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]				
[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]				

			[NCES Code]									
	<b>Focus</b>	Area Knowledge and Skills (CTE standards)	[# of Credits]									
ССТС*	Code Number	KS Statement	[TSAY or N?]									
	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 an 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.										

### **Skills-to-Course Matrix**

### **Automotive Technology**

Aloha High School Portland Community College 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

		f post-secondary. 6) Enter school course numbers. 7) Enter			r							
		(secondary only). 8) Enter number of credits awarded. 9)	, gen	, sch	,							
		trigger the TSA for this POS. 10) Finally, check those standards	Auto Mechanics Tech	ر چارکی					ne)	ne)	ne)	mel
		and purpose, and are <u>assessed</u> in each course. Note: The	anic	anio				. 1	Man.	Wan.	Man.	"Hai.
optional Focus Area tabs below are included for those POSs that have a very specific			Mech.	Mech.	<b>√</b> ech	<b>√</b> ech	<b>√</b> ech	<b>√</b> ech	ر (۱۰	<i>و</i> ه `	ζ8 <b>9</b> `	~ NO
		ose skill sets for multiple options in a Progam of Study or if you	10 M.	Auto Mec.	*0`\	Auto	40 <sup>1</sup>	Auto	ours	Ours	Ours	QUIS
want to use	another set of	industry validated standards.	<b>V</b> C	N. Pr.	₽ <sup>U</sup>	₽ <sup>U</sup>	₽ <sup>U</sup>	V <sub>C</sub>	<i>√</i> C <sup>c</sup>	<u> </u>	√ǰ	<b>₹</b>
			A571X	A572X	A5811	A5812	A5821	A5822	[Course Number]	[Course Number]	[Course Number]	[Course Number]
			20104	20104	20104	20104	20104	20104	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]
	Focus Are	ea Knowledge and Skills (CTE standards)	0.5	0.5	2	2	2	2	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]
CCTC*	Code Number	KS Statement	n	n	V	V	n	n	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]	[TSAY or N?]
	TRHV01	Conduct general inspection, maintenance, and repair on			, <u>, , , , , , , , , , , , , , , , , , </u>	, <u>, , , , , , , , , , , , , , , , , , </u>	"	- "	[IOA-I OI IV:]	[IOAIOIR:]	[IOAI OI N:]	[IOAI OI IV:]
		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										
	TRHV05	repair on diesel engines.  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.						1				
	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.						1				
	TRHV13	Conduct drive axle inspection, maintenance, and repair on										
	TRHV14	medium and heavy trucks.  Conduct air supply and service sytems 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										
	TRHV18	repair on truck hydraulic brakes.  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.						1				
	TRHV24	Conduct steering linkage inspection, maintenance, and										
		repair on medium and heavy trucks.						1	1			
	TRHV25	Conduct suspension system inspection, maintenance, and repair on medium and heavy trucks.										
	TRHV26	Conduct wheel alignment diagnosis, adjustment, and repair					1	+	+			
		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.					1	1				

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.					