

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

Portland Community College  
Engineering  
12/1/2016

Engineering Technology Cluster

2016

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)

			CMET 110	CMET 111	CMET 112	ENGR 102	CMET 121	CMET 122	CMET 123	CMET 131	CMET 213	CMET 227	CH 101	CMET 133	CMET 223	COMM 111	ENGR 226	CMET 241	CMET 233	CMET 237	CMET 254	CMET 235	CMET 221	CMET 211
CCTC	Code Number	KS Statement	Yes	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?
	EN01	Use effective communication skills with a variety of audiences.	x	x	x	x	x	x	x	x	x	x												
	EN02	Exhibit integrity and professionalism in engineering cluster occupations.																						
	EN03	Use technology such as computers and design software to solve engineering problems.							x			x	x	x	x			x	x	x				
	EN04	Understand and use applied mathematics and science for engineering cluster careers.	x	x	x	x	x	x	x	x	x	x												
	EN05	Develop and implement a career plan within the engineering cluster occupations.														x					x			
	EN06	Use teamwork, critical thinking and problem solving skills to address complex problems in engineering.	x	x	x	x	x	x	x	x	x	x												
	EN07	Understand the role of engineering in society throughout history and how it is affected by economics, regulations, politics, and corporate culture.																						
	EN08	Apply design principles and life-cycle methodology to create products, systems, and processes using appropriate technology.															x					x		
	EN09	Understand the impact personal characteristics, such as creativity, resourcefulness, the ability to visualize and the ability to think abstractly have on engineers and their ability to design.	x	x	x	x	x	x	x	x	x	x												
	EN10	Understand and adhere to safety, health, and environmental standards and regulations.															x					x	x	x

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## Chemical Focus Area

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[illegible]

High School Name:  
Community College Name: Portland Community College  
CTE Program of Study Name: Engineering  
Date: 12/1/2016

Civil & Infrastructure Systems Focus Area

2016

Skills-to-Course Matrix

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Focus Area Knowledge and Skills (CTE standards)

CCTC	Code Number	KS Statement	CMET 110	CMET 111	CMET 112	ENGR 102	CMET 121	CMET 122	CMET 123	CMET 131	CMET 213	CMET 227	CH 101	CMET 133	CMET 223	COMM 111	ENGR 226	CMET 228	CMET 211	CMET 214
	ENCV01	Understand and use material science to solve problems appropriate to civil engineering.									x			x				x		
	ENCV02	Demonstrate knowledge of fluid dynamics.																		
	ENCV03	Demonstrate knowledge of structural dynamics.																		
	ENCV04	Understand and apply basic principles of environment quality.																	x	
	ENCV05	Understand and apply knowledge of soil structure and mechanics to solve problems in civil engineering.																x		
	ENCV06	Understand and use local, regional, national and global spatial data infrastructures.															x			x
	ENCV07	Understand and apply the principles of surveying in civil engineering.															x			x

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## Electrical Systems Focus Area

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[illegible]

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## Manufacturing Systems Focus Area

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[illegible]

High School Name:  
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Date: 12/1/2016

Mechanical Systems Focus Area

2016

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.

Skills-to-Course Matrix

Focus Area Knowledge and Skills (CTE standards)

CCTC	Code Number	KS Statement	CMET 110	CMET 111	CMET 112	ENGR 102	CMET 121	CMET 122	CMET 123	CMET 131	CMET 213	CMET 227	CH 101	CMET 133	CMET 223	COMM 111	ENGR 226	ENGR 262	ENGR 212	ENGR 222	CMET 226
	ENMS01	Understand and use principles of machine theory.	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?	TSA?			
	ENMS02	Demonstrate knowledge of fluid dynamics.									x							x			
	ENMS03	Demonstrate knowledge of statics and dynamics in mechanical systems.	x																		x
	ENMS04	Use knowledge of material science to solve problems appropriate to manufacturing engineering.												x							
	ENMS05	Demonstrate knowledge of thermal dynamics.																x		x	