2019
Skills-to-Course Matrix

Manufacturing Technology

Glencoe High School
Portland Community College
Mar-19

Manufacturing Cluster

CCTC*	Code Number	Cluster Knowledge and Skills (CTE standards) — KS Statement	[Machine Welding Technology 1] [130531X] [13053] [.5] N	[Machine Welding Technology 1] [1305311] [13053] [.5] N	[Machine Welding Technology 1] [1305312] [13053] [1] N	[Machine Welding Technology 2] [1305321] [13053] [1] YES	[Course 5 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 6 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 7 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 8 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 9 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 10 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]
MN 1	MN01	Evaluate the nature and scope of the Manufacturing Career Cluster^{TM} and the role of manufacturing in society and in the economy.	x	x	x	x						
MN 2	MN02	Analyze and summarize how manufacturing businesses improve performance.	x	x	x	x						
MN 3	MN03	Comply with federal, state and local regulations to ensure worker safety and health and environmental work practices.	x	x	x	x						
MN 4	MN04	Describe career opportunities and means to achieve those opportunities in each of the Manufacturing Career Pathways.	x	x	x	x						
MN 5	MN05	Describe government policies and industry standards that apply to manufacturing.	x	x	x	x						

2019

Skills-to-Course Matrix

Manufacturing Technology

Glencoe High School
Portland Community College
Mar-19

Health, Safety & Environmental Assurances   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 <u>taught with intent and purpose</u>, and are <u>assessed</u> in each course. Note: The optional Focus Area tabs below are included for those POSs that have a very specific industry focus 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.

CCTC*	Code Number	Focus Area Knowledge and Skills (CTE standards) KS Statement	[Machine Welding Technology 1] [130531X] [13053] [.5] N	[Machine Welding Technology 1] [1305311] [13053] [.5] N	[Machine Welding Technology 1] [1305312] [13053] [1] N	[Machine Welding Technology 2] [1305321] [13053] [1] YES	[Course 5 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 6 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 7 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 8 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 9 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 10 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]
MN-HSE 1	MNHS01	Demonstrate the safe use of manufacturing equipment.	X	X	X	X						
MN-HSE 2	MNHS02	Develop safety plans for production processes that meet health, safety and environmental standards.	X	X	X	X						
MN-HSE 3	MNHS03	Demonstrate a safety inspection process to assure a healthy and safe manufacturing environment.	X	X	X	X						
MN-HSE 4	MNHS04	Evaluate a system of health, safety and/or environmental programs, projects, policies or procedures to determine compliance.	X	X	X	X						
MN-HSE 5	MNHS05	Evaluate continuous improvement protocols and techniques in health, safety and/or environmental practices.	X	X	X	X						
MN-HSE 6	MNHS06	Conduct job safety and health analysis for manufacturing jobs, equipment	X	X	X	X						
MH-HSE 7	MNHS	Develop the components of a training program based on environmental health and safety regulations.	X	X	X	X						

2019

Skills-to-Course Matrix

Manufacturing Technology

Glencoe High School
Portland Community College
Mar-19

Logistics & Inventory Control Focus Area

CCTC*	Code Number	Focus Area Knowledge and Skills (CTE standards) KS Statement	[Machine Welding Technology 1] [130531X] [13053] [.5] N	[Machine Welding Technology 1] [1305311] [13053] [.5] N	[Machine Welding Technology 1] [1305312] [13053] [1] N	[Machine Welding Technology 2] [1305321] [13053] [1] YES	[Course 5 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 6 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 7 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 8 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 9 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 10 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]
MN-LOG 1	MNLG01	Demonstrate positive customer service skills in regard to logistics and inventory control issues.	X	X	X	X						
MN-LOG 2	MNLG02	Demonstrate proper handling of products and materials in a manufacturing facility.	X	X	X	X						
MN-LOG 3	MNLG03	Develop a safety inspection process to assure a healthy and safe manufacturing facility.	X	X	X	X						
MN-LOG 4	MNLG04	Manage inventory using logistics and control processes and procedures.	X	X	X	X						

2019

Skills-to-Course Matrix

Manufacturing Technology

Glencoe High School
Portland Community College
Mar-19

Machining & Metalforming Focus Area

CCTC*	Code Number	Focus Area Knowledge and Skills (CTE standards)	[Machine Welding Technology 1] [130531X] [13053] [.5] N	[Machine Welding Technology 1] [1305311] [13053] [.5] N	[Machine Welding Technology 1] [1305312] [13053] [1] N	[Machine Welding Technology 2] [1305321] [13053] [1] YES	[Course 5 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 6 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 7 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 8 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 9 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 10 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]
		KS Statement										
	MNMF01	Perform skills necessary to operate metalforming equipment.	X	X	X	X						
	MNMF02	Handle materials used in metalforming operations.	X	X	X	X						
	MNMF03	Perform skills necessary in planning and controlling metalforming operations.	X	X	X	X						
	MNMF04	Perform bench operations related to machining.	X	X	X	X						
	MNMF05	Perform metal cutting operations on a lathe.	X	X	X	X						
	MNMF06	Perform metal cutting operations on a mill.	X	X	X	X						
	MNMF07	Perform metal cutting operations using contour sawing and electric discharge.	X	X	X	X						
	MNMF08	Perform metal cutting operations using a drill press.	X	X	X	X						
	MNMF09	Perform metal cutting operations using grinding equipment.	X	X	X	X						
	MNMF10	Perform inspection and quality assurance procedures in machining.	X	X	X	X						
	MNMF11	Understand properties of materials and their relationship to machining processes.	X	X	X	X						

2019

Skills-to-Course Matrix

Manufacturing Technology

Glencoe High School
Portland Community College
Mar-19

Maintenance, Installation & Repair 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.

			[Machine Welding Technology 1]	[Machine Welding Technology 1]	[Machine Welding Technology 1]	[Machine Welding Technology 2]	[Course 5 Name]	[Course 6 Name]	[Course 7 Name]	[Course 8 Name]	[Course 9 Name]	[Course 10 Name]
			[130531X]	[1305311]	[1305312]	[1305321]	[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]
			[13053]	[13053]	[13053]	[13053]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]
	Focus Area Knowledge and Skills (CTE standards)		[.5]	[.5]	[1]	[1]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]
CCTC*	Code Number	KS Statement	N	N	N	YES	[TSA--Y or N?]	[TSA--Y or N?]	[TSA--Y or N?]	[TSA--Y or N?]	[TSA--Y or N?]	[TSA--Y or N?]
MN-MIR 1	MNMR01	Demonstrate maintenance skills and proficient operation of equipment to maximize manufacturing performance.	x	x	x	x						
MIN-MIR 2	MNMR02	Demonstrate the safe use of manufacturing equipment to ensure a safe and healthy environment.	x	x	x	x						
MN-MIR 3	MNMR03	Diagnose equipment problems and effectively repair manufacturing equipment.	x	x	x	x						
MN-MIR 4	MNMR04	Investigate and employ techniques to maximize manufacturing equipment performance.	x	x	x	x						
MN-MIR 5	MNMR05	Implement a preventative maintenance schedule to maintain manufacturing equipment, tools and workstations.	x	x	x	x						
MN-MIR 6	MNMR06	Implement an effective, predictive and preventive manufacturing equipment maintenance program.	x	x	x	x						

2019

Skills-to-Course Matrix

Manufacturing Technology

Glencoe High School
Portland Community College
Mar-19

Manufacturing Production Process Development

Focus Area

CCTC*	Code Number	**Focus Area** Knowledge and Skills (CTE standards) / KS Statement	[Machine Welding Technology 1]	[Machine Welding Technology 1]	[Machine Welding Technology 1]	[Machine Welding Technology 2]	[Course 5 Name]	[Course 6 Name]	[Course 7 Name]	[Course 8 Name]	[Course 9 Name]	[Course 10 Name]
			[130531X]	[1305311]	[1305312]	[1305321]	[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]	[Course Number]
			[13053]	[13053]	[13053]	[13053]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]	[NCES Code]
			[.5]	[.5]	[1]	[1]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]	[# of Credits]
			N	N	N	YES	[TSA--Y or N?]	[TSA--Y or N?]	[TSA--Y or N?]	[TSA--Y or N?]	[TSA--Y or N?]	[TSA--Y or N?]
MN-PPD 1	MNXA01	Produce quality products that meet manufacturing standards and exceed customer satisfaction.	x	x	x	x						
MN-PPD 2	MNXA02	Research, design and implement alternative manufacturing processes to manage production of new and/or improved products.	x	x	x	x						
MN-PPD 3	MNXA03	Monitor, promote and maintain a safe and productive workplace using techniques and solutions that ensure safe production of products.	x	x	x	x						
MN-PPD 4	MNXA04	Implement continuous improvement processes in order to maintain quality within manufacturing production.	x	x	x	x						
MN-PPD 5	MNXA05	Develop procedures to create products that meet customer needs.	x	x	x	x						

2019
Skills-to-Course Matrix

Manufacturing Technology

Glencoe High School
Portland Community College
Mar-19

Mechanical CAD/Drafting Focus Area

CCTC*	Code Number	KS Statement	[Machine Welding Technology 1] [130531X] [13053] [.5] N	[Machine Welding Technology 1] [1305311] [13053] [.5] N	[Machine Welding Technology 1] [1305312] [13053] [1] N	[Machine Welding Technology 2] [1305321] [13053] [1] YES	[Course 5 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 6 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 7 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 8 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 9 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]	[Course 10 Name] [Course Number] [NCES Code] [# of Credits] [TSA--Y or N?]
	MNPJ01	Apply measurement and scale concepts in drafting and design.	X	X	X	X						
	MNPJ02	Interpret engineering documents and control documents.	X	X	X	X						
	MNPJ03	Create technical sketches using drafting procedures.	X	X	X	X						
	MNPJ04	Use a CADD system and procedures.	X	X	X	X						
	MNPJ05	Detail projection views/components.	X	X	X	X						
	MNPJ06	Explore mechanical drafting/design concepts and problems.	X	X	X	X						
	MNPJ07	Demonstrate drafting/design concepts as related to basic manufacturing processes.	X	X	X	X						
	MNPJ08	Incorporate geometric dimensioning and tolerancing (GDT) standards.	X	X	X	X						
	MNPJ09	Depict assemblies of components.	X	X	X	X						

Focus Area Knowledge and Skills (CTE standards)