GMACW Steel Fabrication Competency to Curriculum Crosswalk

The following table represents a high-level analysis of the *Welding* programs offered at TCAT-Memphis, Moore Tech, Southwest Tennessee Community College, and ASU Mid-South. Historically, these institutions have focused specifically on welding rather than steel fabrication in more general terms. In order to complement this crosswalk—and respond to the Steel Fabricators Council's workforce needs—TPMA has also developed an academic pathway and competency list specifically for Fitters. Please see the document titled "Recommended Fitter Academic Pathway and Competency List" for occupation specific recommendations. The competencies below are organized and color coded based upon the Advanced Manufacturing Competency Model (http://www.careeronestop.org/competencymodel/competency-models/advanced-manufacturing.aspx).

			Moore Tech						STCC	Mid-South							
		TCAT	WELD 111	WELD 112	WELD 113	WELD 211	WELD 212	WELD 213	MTEC1000	Weld1053	Weld1113	Weld1123	Weld 1133	Weld 1143	Tech1003	Tech 1013	Tech 1303
Assemble structural steel for welders	Occupation																
Chip and grind off excess weld, slag or splatter	Occupation								x								
CNC programming	Occupation						x										
Flux Cored Arc Welding	Occupation	x	x														
Gas Metal Arc Welding (Mig)	Occupation	x	x								x	x	x	x			
Gas Tungsten Arc Welding (Tig)	Occupation	x			x					x	x						
Inspecting completed work for conformance to specifications	Occupation			x			x			x							
Oxygen-Acetylene Cutting (OAC)	Occupation	x	x				x		x	x			x				
Operate welding equipment	Occupation								x	x	x	x	x	X			
Perform preventative maintenance on equipment	Occupation								x								
Pipe Welding	Occupation					x											
Plasma Arc Welding	Occupation	x		x	x		x		x	x				x			
Read Weld Symbols	Occupation		x						x		x	x	x	x			
Robotic Welding	Occupation							x									
Set-up and layout	Occupation		x						x	x	x	x	x			x	
Shielded Metal Arc Welding (stick welding)	Occupation	x	x							x		x					
Structural steel movement and manipulation	Occupation																
Welds components in flat, vertical, or overhead positions	Occupation	x		x							x	x	x	x			
Manufacturing Process Design and Development	Industry																
Production	Industry																
Maintenance, Installation, and Repair	Industry																
Supply Chain Logistics	Industry																

Quality Assurance / Continuous Improvement	Industry																
Sustainable & Green Manufacturing	Industry																
Health, Safety, Security & Environment	Industry																
Adaptability / Flexibility	Workplace																
Analyze charts	Workplace													x			
Blueprint Reading	Workplace	x	x											x			
Business Fundamentals	Workplace																
Checking, Examining, and Recording	Workplace																
Communication with supervisors, peers, or subordinates	Workplace	x															
Gathering and using information	Workplace																
Judgment and Decision Making	Workplace													x			
Marketing and Customer Focus	Workplace																
Measurement	Workplace													x	x		
Monitoring (equipment / devices)	Workplace													x			
Operating vehicles and equipment	Workplace	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Planning and Organizing	Workplace																
Problem Solving and Decision Making	Workplace																
Safety (chemical Hazards, lock-out/tag-out procedures)	Workplace	x	x	x	x	x	x	x	x	x					x		
Selecting and using hand tools and power tools	Workplace		x							x	x	x	x	x		x	x
Sequencing	Workplace										x					x	
Social Perceptiveness	Workplace																
Sustainable Practices	Workplace																
Teamwork	Workplace																
Time Management	Workplace																
Troubleshooting	Workplace			x						x	x	x	x	x			
Working with Tools and Technology	Workplace																
Basic Computer Skills	Academic									x	x	x	x	x	x	x	x
Communication - Listening and Speaking	Academic																
Communication (Written and Verbal)	Academic									x	x	x	x	x	x	x	x
Critical & Analytic Thinking	Academic									x	x	x	x	x	x	x	x
Information Literacy	Academic														x		
Mathematics	Academic		x	x	x					x	x	x	x	x	x	x	x
Metallurgy	Academic																
Problem solving / decision making	Academic			x											x		
Reading Comprehension	Academic																
Science	Academic																
Trigonometry	Academic																
Writing	Academic																

Interpersonal Skills	Personal Effectiveness																
Integrity	Personal Effectiveness																
Professionalism	Personal Effectiveness																
Initiative	Personal Effectiveness																
Dependability and Reliability	Personal Effectiveness																
Lifelong Learning	Personal Effectiveness																