

	7th Grade: Gateway to Engineering	8th Grade: Automation & Robotics	8th Grade: Applied Engineering	Introduction to Drafting and Design	Introduction to Woodworking	Advanced Wood Technology	Introduction to Metalworking	Advanced Metalworking	Architectural Drawing	Energy, Power, & Transportation Technology	Introduction to Construction * Notes DMACC Standard
Standard 2: Develop ideas and products through a comprehensive process aligned with industry. (Production)											
Benchmark A: (Safety) Develop and apply safety procedures related to production.											
				Use software and hardware appropriately within the classroom.	Demonstrate and operate production tools safely.	Demonstrate and operate production tools safely.	Demonstrate and operate production tools and machines safely.	Demonstrate and operate production tools and machines safely.	Use software and hardware appropriately within the classroom.	Demonstrate and operate production tools and machines safely.	*Demonstrate knowledge needed to safely operate hand, power, and stationary tools.
					Identify general lab and classroom safety while developing safe work habits.	Identify general lab and classroom safety while developing safe work habits.	Identify general lab and classroom safety while developing safe work habits.	Identify general lab and classroom safety while developing safe work habits.		Identify general lab and classroom safety while developing safe work habits.	
					Select and utilize hand tools correctly.	Select and utilize hand tools correctly.					
Benchmark B: (Precision/Engineering) Manipulate tools and technology with precision.											
	Designs 3D models with precision and accuracy.			Create products using Autodesk or related software for 2D and 3D applications.	Accurately use measurement devices for both standard and metric.	Accurately use measurement devices for both standard and metric.	Manufacture and assemble projects utilizing both standard and metric measurement systems.	Understand manufacturing tolerances and utilize them to guide metal shop production.	Create products using Autodesk or related software for 2D and 3D applications.	Manufacture and assemble projects utilizing both standard and metric measurement systems.	Accurately measure and manipulate materials.
	Understand role of measurement between design and production.			Construct drawings using necessary ANSI Dimensioning Standards.	Demonstrate proper machine set-up.	Demonstrate proper machine set-up.	Understand manufacturing tolerances and utilize them to guide metal shop production.	Identify geometrical characteristics of metal products and how to set up machines in order to create or maintain these properties in metal products.	Construct drawings using necessary ANSI Dimensioning Standards.	Understand tolerances and utilize them to guide energy, power, and transportation production.	
					Select appropriate equipment for material processing.	Select appropriate equipment for material processing.	Identify geometrical characteristics of metal products and how to set up machines in order to create or maintain these properties in metal products.			Select appropriate equipment and tools for energy, power, and transportation projects.	
					Apply proper layout skills with appropriate tools.	Apply proper layout skills with appropriate tools.					
Benchmark C: (Application) Understand and demonstrate fundamental production techniques.											
				Demonstrate the ability to correctly hand sketch using appropriate techniques.	Identify and choose appropriate assembly techniques.	Identify and choose appropriate assembly techniques.	Identify and choose appropriate assembly techniques.		Demonstrate the ability to correctly hand sketch using appropriate techniques.	Identify and choose appropriate assembly techniques.	*Identify appropriate use of hand and power tools for specific construction jobs.
				Develop a working prototype using a 3D Printer.	Identify and perform correct production techniques.	Identify and perform correct production techniques.	Identify and perform correct production techniques.	Identify and perform correct production techniques.	Develop a working drawing and output the drawing on a plotter.	Identify and perform correct techniques used for energy, power, and transportation.	
					Prepare and apply appropriate finishes	Prepare for and apply appropriate finishes	Understand and properly execute metal joining techniques.	Understand and properly execute metal joining techniques.		Understand and execute proper techniques to complete a project.	

	7th Grade: Gateway to Engineering	8th Grade: Automation & Robotics	8th Grade: Applied Engineering	Introduction to Drafting and Design	Introduction to Woodworking	Advanced Wood Technology	Introduction to Metalworking	Advanced Metalworking	Architectural Drawing	Energy, Power, & Transportation Technology	Introduction to Construction * Notes DMACC Standard
Standard 2: Develop ideas and products through a comprehensive process aligned with industry. (Production)											
					Perform correct processing of materials.	Perform correct processing of materials.	Understand and properly execute metal cutting techniques.	Understand and properly execute metal cutting techniques.			
							Understand and properly execute metal shaping techniques.	Understand and properly execute metal shaping techniques.			
Benchmark D: (Execution) Understand and demonstrate material selection and use.											
				Identify appropriate materials for a design solution.	Identify appropriate materials for the chosen product	Identify appropriate materials for the chosen product	Identify appropriate materials for the chosen product	Identify appropriate materials for the chosen product	Identify appropriate materials for a design solution.	Identify appropriate materials for the chosen product	Identify appropriate materials for a design solution
					Classify different wood species and material properties.	Classify different wood species and material properties.	Classify commonly used metals and their properties.	Classify commonly used metals and their properties.		Utilize appropriate materials for a design solution.	
							Utilize appropriate processes to shape, cut, and join materials.	Utilize appropriate processes to shape, cut, and join materials.			