	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 1: Create intellectual products and services that reflect mental agility, the design process, and conceptual understandings tied to the real-world. (Design/Engineering)											
Benchmark A: Collaborate & effectively communicate ideas.											
	Communicate ideas for a design using various sketching methods.	Communicate ideas for a design using various sketching methods.	Communicate ideas for a design using various sketching methods.	Create drawing types and views to communicate ideas.	Read, interpret, and create working drawings.	Read, interpret, and create working drawings .	Interpret and utilize measurement systems and standards for various uses throughout the metal shop.	Read, interpret, and create working drawings.	Identify drawing types and views.	Understand the functionality of current and historical energy, power, and transportation systems.	Read and interpret plans.
	Create a multi-view drawing with correct dimensioning.			Interpret a plan for the creation of a product.	Compose a written Plan of Procedure to organize production.		Analyze plans, symbols, and schematics which are commonly used in metalworking.	Compose a written plan to organize production.	Interpret a plan for the creation of a structure.	Analyze schematics, symbols, and technical manuals to complete projects.	Sketch/draw plans for small project.
									Understand drawing conventions.	Understand and use technical manuals.	
Benchmark B: (STEM Connections) Use science, technology, engineering, and math to create solutions.											
	Visualize and create a product in a virtual environment.			Understand and use measurement skills.	Understand and use measurement skills.	Understand and use measurement skills.	Classify metals based on their properties and characteristics.	Understand and utilize precision measurement practices and instruments.	Understand and use measurement skills.	Identify the properties and characteristics of different energy sources.	Explain the importance of estimation in the construction trade.
				Apply material properties to virtual objects.			Choose and utilize the appropriate metal for a given application.		Apply material properties to virtual objects.	Calculate electrical, hydraulic/pneumatic, and mechanical quantities.	Comply with building codes.
				Apply geometrical constraints and measurements through CADD Software.			Employ precision measurement in metal shop layout and operations.		Apply geometric constraints and measurements through software.	Understand the functionality of various power conversion technologies.	
Benchmark C: (Design Process) Apply the design process.											
	Use a design process to solve problems.	Use a design process to solve problems.	Use a design process to solve problems.	Compare and contrast design processes for identified problems.	Create a project using a working drawing.		Construct projects based on the appropriate manufacturing and assembly sequences.	Develop a plan to create a product.	Compare and contrast design processes for identified problems.	Develop an energy, power, or transportation solution to a given problem.	
							Choose the correct metal joining and fastening techniques or processes.		Develop a working drawing.	Analyze and select the most appropriate power technology for a given application. (Hydraulic vs. Electric vs. Petroleum)	