MANUFACTURING TECHNOLOGIES APPRENTICESHIP

Date:_____ Student's High School:_____

Student Name:_____

Counselor Signature:_____

Academic Related Training & Instruction (RTI)		
Initial if completed	**Required Classroom Training**	**Equivalent Course Name & school providing the skill training***
	Project Lead the Way – Introduction to Engineering and Design ***If student took this class at the Career Academy of Pella, initial at left and proceed to next highlighted class below. If not, please complete for each following skill:***	
	Engineering Mindset & Design Process: Successful engineers exhibit specific personal and professional characteristics that lend themselves to the creative, collaborative, and solution-driven nature of the profession	
	Engineering Tools and Technology: The practice of engineering requires the application of mathematical principles and common engineering tools, techniques, and technologies.	
	Technical Sketching and Drawing: Exploring, visualizing and communicating engineering designs and technical information is often accomplished through technical sketches and drawings.	
	Computer-Aided Design (CAD): Software Engineers use computer-aided design software to facilitate the design, documentation, and communication of solutions to engineering problems.	
	Reverse Engineering: Engineers analyze the visual, functional, and structural elements of existing products for many reasons, including knowledge attainment, product or process improvement, and failure analysis.	
	Collaboration & Communication: Demonstrate an ability to function on multidisciplinary teams. Engineering practice requires effective communication with a variety of audiences using multiple modalities	
	Adv. Manufacturing OR Metal Design and Marketing ***If student took this class at the Career Academy of Pella, initial at left and proceed to next highlighted class below. If not, please complete for each following skill:***	
	Execute safe work practices using course equipment	

	Demonstrate general shop safety	
	Differentiate when to use CAD and CAM	
	Compose complex shapes using CAD	
	Drawing basic shapes using CAD	
	Work as a team to help others assemble projects correctly when more hands are needed	
	Ag Structures OR Fundamentals of Construction ***If student took this class at the Career Academy of Pella, initial at left and proceed to next highlighted class below. If not, please complete for each following skill:***	
	Demonstrate knowledge of welding and basic machine safety	
	Able to follow through project execution with machine shop, welding, assembly, and any other necessary departments	
	Able to correctly troubleshoot & repair various electrical problems	
	Demonstrate ability to read and write electrical schematics and modify electrical control boxes.	
	Demonstrates knowledge of electrical standards and codes	
	Demonstrate ability to select, install, and wire standard industrial control components according to project requirements and design intent with minimal support from an electrical designer or engineer	
	Demonstrate ability to select proper electrical components for a given application. Able to evaluate several options based on technical information and make an informed decision.	
	Able to correctly maintain existing equipment	
	Robotics 1 ***If student took this class at the Career Academy of Pella, initial at left and this form is complete. If not, please complete for each following skill:***	
	Circuits: Understands the purposes of basic electronics components, circuit theory, schematic symbols and drawings, and evaluates manufacturing feasibility.	
	Design Process: Understands the process of design planning, objective analysis, iteration, and analytic design breakdown.	
	Materials & Their Characteristics: Understands basic mechanical components and measurement units. Also, know the properties of various tools and the physical characteristics of different materials.	
	Systems Thinking: Identifies parts of a robot as part of a larger system. Analyzes block diagrams of abstracted systems and understands the interactions between subsystems.	
	Communication: Communicates clearly with peers, mentors, and others about concepts, goals, decisions, and processes.	
	Collaboration: Works amicably with others to overcome conflicts and differences of opinions to develop work products and solve problems. Recognizes individual strengths and weaknesses and different leadership styles.	

***Course providers outside of the Career Academy of Pella may have classes by a different name, which teach the same academic competency as the Career Academy course listed**