

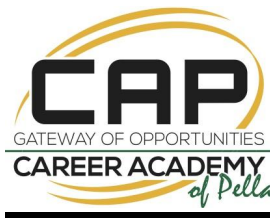
MANUFACTURING TECHNOLOGIES APPRENTICESHIP

Date: _____ Student's High School: _____

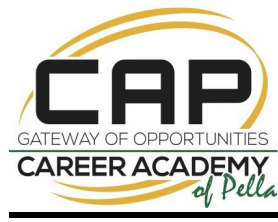
Student Name: _____

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 <i>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:</i> | |
| | 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 <i>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:</i> | |
| | Execute safe work practices using course equipment | |



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|--|--|--|
| | 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 <i>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:</i> | |
| | 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 <i>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:</i> | |
| | 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**