

## Center for Workforce Development

# Advanced Manufacturing Pre-Apprenticeship Programs

August 21-December 12, 2023 • \$1,000 per program

### Maintenance : Introduction to Manufacturing Processes

*This course is a study of basic industrial systems which will cover hydraulic, pneumatic, mechanical (bearings, gearing, belt drives, chain and sprockets coupling, clutches and brakes); electrical controls (relay, logic, PLC's and variable frequency drive). The course will also cover measuring equipment, blue print reading, material flow, and equipment up keep.*

### Welding-Welding I Lecture/Lab

*An introduction to welding safety, oxygen-acetylene cutting and welding, plasma, air-arc, and grinding.*

### Precision Machining-Print Reading & Design

*A course designed for a beginning course in the fundamentals of industrial print reading. This course provides the basics of print reading with an emphasis on working with industrial prints. Throughout the course, Solid Works is introduced to acquaint the student with the basic fundamentals of how drawings and designs are made and the different types of drawings and designs used in industry. The student will construct multi-view drawings to solve problems related to points, lines, planes, intersections, and auxiliary surfaces of three dimensional objects. Freehand sketches will be done on paper and drawings will be done using Solid Works cad software on a computer. In the lab portion of the course students will be able to practice and demonstrate acquired skills using the same equipment and tools found in the industry.*

### HVAC-Intro to Heating and Cooling

*An introduction to the theory of refrigeration, the safe and proper use of refrigeration hand tools. Basic electrical theory, knowledge of electrical circuits, and the practical application of electricity, motors, controls, and common components. Students will gain technical knowledge and skills required for installation and maintenance of refrigeration systems. Environmental Protection Agency (EPA) 608 certification will also be studied.*

*All courses will be held at the ECC Business & Industry Center located at 42 Prairie Dell Plaza Drive, Union, MO, 63084*