

Program Planning Tool

Program Title: CIP 48.0508 WELDING & METAL FABRICATION

Student Name: _____

This document has been designed as a tool to facilitate student placement decisions and provides important information about the program. The chart on the reverse side is designed to assist in the identification of necessary skills, present educational levels, and supports, if any, that are needed to foster program success.

Program Completion Requirements

A successful student will...

- Secondary Academic Course Requirements: The PA Dept. of Education's focus is to ensure every student is college and career ready, therefore all students are recommended to follow a college prep sequence of academic classes. Courses such as applied math or general science are not appropriate for this program. PDE's goal is to have all students perform at the competent or advanced level on the Keystone Exams and Program of Study end-of-program assessment (NOCTI).
- Complete an Occupational Competency Assessment (i.e. NOCTI end-of -program exam) and score at the "competent" or "advanced" level. This end-of -program exam will cover the full scope of the program of study curriculum and includes (1) a multiple choice test and (2) a performance test consisting of occupational related tasks scored and evaluated by industry judges.
- Earn a minimum of one industry recognized certification. Students will be encouraged and expected to earn all recognized industry certifications that make up the scope of the curriculum. Accommodations are not permitted for industry certifications. These include: OSHA, AWS L1 and AWS L2. The program conforms to the standards of the American Welding Society and students are expected to become certified welders.
- Complete the approved program curriculum and earn a minimum of one RMCTC Job Title aligned with the student's career objective. Job titles are identified on the program task list, aligned with local workforce needs and high priority employment occupations, and annually reviewed and approved by the program's occupational advisory committee.
- Successful completion of Keystone Exams as determined by sending school district.
- Maintain a 95% attendance rate or better.
- Transition on to a post-secondary institution, military or related fulltime employment aligned to their CTC program of study.

Instructional Process/Specifications

A successful student will...

- Perform a wide variety of tasks in a laboratory environment with equipment consistent with industry standards. Up to 25 students are assigned to work "independently" and in "small teams". Students progress through using learning guides in a self-directed manner. Working in the laboratory, students will be required to use hand and power tools including grinders, drill presses, blow torches and other welding equipment, shears, band saws, chop saws, belt sanders, and pipe cutters.
- Students are required to perform oxyacetylene cutting & welding, shielded metal arc welding, gas metal arc welding, gas tungsten arc welding. Students are required to properly handle chemicals and gases associated with each welding technique. Use equipment that requires self-discipline and strict adherence to rules to ensure safety of self and others. Lab simulates a real working environment therefore students will be exposed to the noise levels, dust, debris, and fumes associated with the welding profession.
- Participate in classroom theory and laboratory applications for generally 2 ½ hours each day; students will spend 40% of their time in classroom theory and 60% of their time doing laboratory applications and live work.
- Complete written and performance tests. Students will be evaluated weekly on occupational skill performance using rubrics. In addition, students will be evaluated daily on work ethics. Progress is measured by test performance, task completion and work ethic.
- Participate in Career & Technical Student Organizations including SkillsUSA and/or National Technical Honor Society.
- Participate in a paid or unpaid work based learning related to the Program of Study (cooperative education, clinical internship, and/or job shadowing).
- Read and study textbooks and technical manuals. Most textbooks are written at a 10th to 11th grade reading level and most technical manuals are written at a higher level.
- Complete homework on time. Homework typically involves chapter or workbook assignments, on line research assignments and writing assignments.
- Purchase appropriate work and safety attire, tools, and equipment. Following is an estimated breakdown of costs: UNIFORM: Welding Gloves \$5, Safety Glasses \$3

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CTE Requirements	Present Educational Ability/Level	Support Needs
<p>Program Completion – Strong self-determination skills and understanding of personal strengths and weaknesses. Ability to meet industry established standards of performance, complete the program of study without curriculum modifications, and earn industry certifications without testing accommodations.</p>		
<p>Reading Level- Text and manuals written on a 10-11th grade reading level. Proficient on end-of-course exam (Keystone). Ability to analyze engineering drawings, blueprints, specifications, sketches, work orders, and material safety data sheets to plan layout, assembly, and welding operations. NOCTI Assessment & Industry Certification Exams require a proficiency in English language skills.</p>		
<p>Math Level - At grade level and proficient on end-of-course exam (Keystone). Knowledge of arithmetic, algebra, geometry and their applications. Ability to do precise measuring and dimensioning according to blueprints and drawings. Ability to use math to solve problems.</p>		
<p>Aptitude – Mechanical aptitude, visualization, deductive reasoning, inductive reasoning, oral comprehension, oral expression, critical thinking, complex problem solving and trouble shooting skills, selective attention.</p>		
<p>Safety & Physical – Hand-eye coordination. Arm-hand steadiness, near vision, controls precision, manual dexterity, multi-limb coordination, static strength, trunk strength. Frequent standing, bending and lifting required. Self-discipline and focus are needed for safety using welding equipment, hand tools, power tools and other equipment found in the industry. Able to lift 50lbs, ability to work independently, read and follow directions, good eye/hand coordination, stamina to stand for long periods of time.</p>		
<p>Interpersonal/ Social – Ability to work independently and in a team. Good overall communication skills and the ability to relate well to customers and coworkers. Self-discipline a must due to safety issues.</p>		
<p>Other Occupational/Program Considerations - Exposed to the noise levels, dust, debris, and fumes associated with the welding profession. Stamina for long periods of standing. Tolerance to working in hot environments.</p>		