

Essential Skills Chart  
WELDING

<b>WELDING</b> 48.0508	
<p><b>Objective of Technical Education-</b></p> <ul style="list-style-type: none"> <li>➤ Upon successful completion of this program, students will be prepared for an entry level position in the field of welding. Students are offered the opportunity to acquire the technical knowledge and skills in SMAW, GMAW, FCAW, GTHW, OXY FULE CUTTING, CAC-A PLASMA CUTTING</li> <li>➤ Use of manual, semiautomatic welding processes are also included in the instruction.</li> <li>➤ Students learn required safety practices and procedures.</li> <li>➤ Students are provided instruction on types and uses of electrodes and welding rods; properties of metals; blueprint reading; electrical principles; welding symbols and mechanical drawing; use of equipment for testing welds and non-destructive testing; use of manuals and specification charts; use of portable grinders; positioning and clamping; and welding standards established by the American Welding Society, American Society of Mechanical Engineers and American Bureau of Ships.</li> </ul>	
PROGRAM SAFETY REQUIREMENTS	<ul style="list-style-type: none"> <li>• DEMONSTRATE SELF-DISCIPLINE TO REMAIN IN WORK LOCATION FOR EXTENDED PERIODS OF TIME</li> <li>• SELF-CONTROL AND SAFETY AWARENESS IS REQUIRED FOR THE SAFETY OF ALL STUDENTS, TEACHERS AND SELF TO USE BLOW TORCHES, HAND TOOLS, POWER TOOLS, WELDING EQUIPMENT</li> <li>• REMEMBER &amp; APPLY SAFETY REGULATIONS</li> </ul>
ATTRIBUTES, ABILITIES, SKILLS	<ul style="list-style-type: none"> <li>• WORK INDEPENDENTLY</li> <li>• EYE/HAND COORDINATION</li> <li>• ARM/HAND STEADINESS</li> <li>• NEAR VISION</li> <li>• MECHANICAL APTITUDE</li> <li>• MULTI-LIMB COORDINATION</li> <li>• CRITICAL THINKING</li> <li>• PROBLEM SOLVING SKILLS</li> <li>• MULTI-TASKING</li> <li>• SEQUENTIAL STEPS</li> <li>• TIME MANAGEMENT</li> <li>• SELF-MOTIVATION</li> </ul>
ACADEMIC SKILLS  READING MATH SCIENCE	<ul style="list-style-type: none"> <li>• TEXT BOOK READING LEVEL 11<sup>th</sup> GRADE- TEACHER-MADE PRESENTATIONS, ONLINE MATERIALS AND RESOURCES ARE USED</li> <li>• WRITING SKILLS</li> <li>• CALCULATE &amp; APPLY ARITHMETIC, GEOMETRY, ALGEBRA, MULTIPLICATION</li> <li>• CALCULATE DIMENSIONS &amp; MEASUREMENTS</li> <li>• UNDERSTANDING OF GEOMETRIC SHAPES</li> <li>• DEMONSTRATE PROBLEM SOLVING SKILLS</li> <li>• BLUEPRINT &amp; DIAGRAM READING SKILLS</li> </ul>

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	<ul style="list-style-type: none"> <li>• READ &amp; CALCULATE FRACTIONS</li> <li>• READ &amp; CALCULATE DECIMALS</li> <li>• APPLY LINEAR MEASUREMENTS IN STANDARD UNITS</li> </ul>
PHYSICAL REQUIREMENTS	<ul style="list-style-type: none"> <li>• ABILITY TO STAND IN A SMALL SPACE FOR LONG PERIODS OF TIME</li> <li>• ABILITY TO LIFT AT LEAST 50 POUNDS</li> <li>• ABILITY TO WITHSTAND CONSTANT LOUD NOISES,</li> <li>• ABILITY TO WITHSTAND FUMES, DUST AND DEBRIS</li> <li>• ABILITY TO WITHSTAND A HOT WORK ENVIRONMENT</li> <li>• ABILITY TO WORK IN SMALL SPACES FOR EXTENDED PERIODS OF TIME</li> <li>• ABILITY TO WEAR A HELMET FOR LONG PERIODS OF TIME</li> <li>• ABILITY TO WORK INDEPENDENTLY FOR LONG PERIODS OF INTENSE CONCENTRATION</li> <li>• ABILITY TO FOCUS ON A SINGLE OBJECT FOR LONG PERIODS OF TIME</li> </ul>
SOFT SKILLS	<ul style="list-style-type: none"> <li>• COOPERATE &amp; COMMUNICATE WITH OTHER TRADESMEN</li> <li>• ABILITY TO WORK WITH OTHERS TO SHARE IDEAS AND SOLVE PROBLEMS TOGETHER</li> <li>• USE TIME WISELY/TIME MANAGEMENT</li> <li>• CONDUCT ONESELF MATURELY</li> <li>• ACCEPT DIRECTIVES &amp; CONSTRUCTIVE CRITICISM FROM TEACHERS</li> </ul>
CLASSROOM ASSIGNMENTS, ASSESSMENTS & TASKS	<ul style="list-style-type: none"> <li>• CLASSWORK/HOMEWORK</li> <li>• TEACHER MADE TESTS</li> <li>• PROJECTS</li> <li>• WELD JOURNALS/TIME CARDS</li> <li>• NOCTI (END OF 12<sup>TH</sup> GRADE)</li> <li>• BENCHMARK ASSESSMENTS (PRE-NOCTI)</li> <li>• TASK LIST- PROGRAM OF STUDY</li> </ul>
INDUSTRY CERTIFICATIONS	<ul style="list-style-type: none"> <li>• OSHA Certification</li> <li>• NOCTI</li> <li>• FLAT, MIG, MASAW</li> </ul>
PROGRAM UNIFORM/COSTS/MATERIALS	<ul style="list-style-type: none"> <li>• STEEL TOE BOOTS/HIGH LEATHER BOOT- \$50-\$125</li> <li>• LEATHER GLOVES (PROVIDED, UNLESS WANT TO PROVIDE OWN)</li> <li>• HELMET (PROVIDED, UNLESS WANT TO PURCHASE OWN)</li> <li>• SAFETY GLASSES (1 PAIR PROVIDED)</li> <li>• WORK SHIRT (1 PROVIDED; ADDITIONAL SHIRTS= \$20)</li> <li>• JEANS OR WORK PANTS- \$20+</li> </ul>
ARTICULATION AGREEMENTS	<ul style="list-style-type: none"> <li>• NCC</li> <li>• PA COLLEGE OF TECHNOLOGY</li> <li>• THADEUS STEVENS</li> </ul>
COOPERATIVE OPPORTUNITIES	<ul style="list-style-type: none"> <li>• BASED ON JOB AVAILABILITY, TEACHER RECOMMENDATION, GRADES OF 77% AND HIGHER, GOOD ATTENDANCE, GOOD BEHAVIOR, DRIVER'S LICENSE AND OWN TRANSPORTATION</li> </ul>

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	<ul style="list-style-type: none"><li>• PARTNERS (EX'S)- PENN DOT, KELLY IRON WORKS, BLUE MOUNTAIN MACHINING, MCADOO, ALLEN TEC.</li></ul>
EMPLOYMENT OUTLOOK & PROJECTED SALARY	<ul style="list-style-type: none"><li>• WELDER- STARTING AT \$45,000.00/year with H.S. diploma</li><li>• \$22.00/hr. w/H.S. diploma</li></ul>
How to find out more?	<ul style="list-style-type: none"><li>• <a href="https://www.onetonline.org">https://www.onetonline.org</a></li><li>• <a href="http://www.carboncti.org">www.carboncti.org</a></li></ul>