



**About the Program**

The purpose of the Welding Program is to prepare individuals for employment in the field of welding. Instruction is provided in various processes and techniques of welding including Oxyfuel cutting, carbon arc cutting, shielded metal arc welding, gas tungsten arc welding, flux-cored arc welding, gas metal arc welding, pipe-welding, plasma arc cutting, blueprint reading, weld symbols, and joints.

After completion of this program, the student will have covered the skills designated by the AWS (American Welding

Society) and will be prepared to take the AWS Entry Level Welder test.

**Degrees/Certificates**

- Technical Diploma (TD)
- Certificate of Technical Studies (CTS)
- Technical Competency Area (TCA)

*Available degrees and certificates may vary at each campus. Check with your local campus for more information.*

**CIP 480508**

| <b>Welding CURRICULUM</b>   |  |                   |              |             |
|---|--|-------------------|--------------|-------------|
| Course #  | Course Title                               | Lecture/Lab Hours | Credit Hours | Clock Hours |
| <b><i>The following program course listings and exit points are non-sequential and delivered depending on industry need and student selection. Courses are required to be taken only once if successfully completed to satisfy exit credentials. The student advisor will assist in proper course sequencing to obtain exit credentials. Additional industry specific courses can be developed as needed.</i></b> |  |                   |              |             |
| WELD1110  | Occupational Orientation & Safety          | 2/0               | 2            | 75          |
| WELD1210  | Oxyfuel Systems/Cutting Processes          | 1/2               | 3            | 115         |
| WELD1410  | SMAW - Basic Beads/Fillet Weld             | 1/3               | 4            | 150         |
| WELD1412  | SMAW- V-Groove BU/GOUGE                    | 0/3               | 3            | 115         |
| WELD2110  | FCAW- Basic Fillet Welds                   | 1/3               | 4            | 150         |
| WELD2310  | GMAW - Basic Fillet Weld/Groove            | 1/3               | 4            | 150         |
| WELD1120  | Basic Blueprint, Metallurgy & Weld Symbols | 2/1               | 3            | 115         |
| WELD1420  | SMAW - V-Groove Open                       | 1/3               | 4            | 150         |
| WELD1130  | Welding Inspection & Testing               | 1/1               | 2            | 75          |
| WELD2210  | GTAW - Basic Multi-Joint                   | 1/2               | 3            | 115         |
| WELD2230  | GTAW- Aluminum Multi-Joint                 | 1/2               | 3            | 115         |
| CPTR1000  | Introduction To Computers                  | 1/1               | 2            | 45          |
| JOBS2450  | Job Seeking Skills                         | 2/0               | 2            | 30          |
| <b>TOTAL (Welding Program Core)</b>   |  |                   | <b>39</b>    | <b>1400</b> |
| <b>TECHNICAL DIPLOMA (TD)- WELDING</b> (requires successful completion of the Welding Program Core plus <b>16</b> credits from the list of <i>Required Electives</i> below:   |  |                   | <b>55</b>    | <b>2063</b> |
| <i>Required Electives</i>   |  |                   |              |             |
| <b>SMAW Process</b>   |  |                   |              |             |
| WELD1510  | SMAW – Pipe 2G                             | 1 /3              | 4            | 166         |
| WELD1511  | SMAW – Pipe 5G                             | 0 /4              | 4            | 166         |
| WELD1512  | SMAW – Pipe 6G                             | 0 /4              | 4            | 166         |
| WELD1610  | SMAW Stainless Steel(SMAW-SS) Multi-Joint  | 1 /3              | 4            | 166         |
| WELD1620  | SMAW Stainless Steel (SMAW-SS) 5G PIPE     | 1 /3              | 4            | 166         |
| WELD1621  | SMAW Stainless Steel (SMAW-SS) 2G PIPE     | 0 /4              | 4            | 166         |
| WELD1622  | SMAW Stainless Steel (SMAW-SS) 6G PIPE     | 0 /4              | 4            | 166         |
| <b>FCAW Process</b>   |  |                   |              |             |
| WELD2112  | FCAW Pipe 5G                               | 1 /3              | 4            | 166         |
| WELD2113  | FCAW Pipe 2G                               | 0 /4              | 4            | 166         |
| WELD2114  | FCAW Pipe 6G                               | 0 /4              | 4            | 166         |
| <b>GTAW Process</b>   |  |                   |              |             |
| WELD2220  | GTAW Pipe 5G                               | 1 /3              | 4            | 166         |
| WELD2221  | GTAW Pipe 2G                               | 0 /4              | 4            | 166         |
| WELD2222  | GTAW Pipe 6G                               | 0 /4              | 4            | 166         |
| WELD2240  | GTAW Low Alloy (GTAW-LA) 5G Pipe           | 1 /3              | 4            | 166         |
| WELD2241  | GTAW Low Alloy (GTAW-LA) 2G Pipe           | 0 /4              | 4            | 166         |
| WELD2242  | GTAW Low Alloy (GTAW-LA) 6G Pipe           | 0 /4              | 4            | 166         |

## Program Description &amp; Curriculum

|   |  |      |           |            |
|---|--|------|-----------|------------|
| WELD2250  | GTAW Stainless Steel (GTAW-SS) 5G Pipe     | 1 /3 | 4         | 166        |
| WELD2251  | GTAW Stainless Steel (GTAW-SS) 2G Pipe     | 0 /4 | 4         | 166        |
| WELD2252  | GTAW Stainless Steel (GTAW-SS) 6G Pipe     | 0 /4 | 4         | 166        |
| WELD2260  | GTAW Aluminum (GTAW-AL) 5G Pipe            | 1 /3 | 4         | 166        |
| WELD2261  | GTAW Aluminum (GTAW-AL) 2G Pipe            | 0 /4 | 4         | 166        |
| WELD2262  | GTAW Aluminum (GTAW-AL) 6G Pipe            | 0 /4 | 4         | 166        |
| <b>GMAW Process</b>                             |  |      |           |            |
| WELD2320  | GMAW - Pipe 2G                             | 1 /3 | 4         | 166        |
| WELD2321  | GMAW - Pipe 5G                             | 0 /4 | 4         | 166        |
| WELD2322  | GMAW - Pipe 6G                             | 0 /4 | 4         | 166        |
| WELD2330  | GMAW - Aluminum Multi-Joint                | 1 /3 | 4         | 166        |
| WELD2340  | GMAW Aluminum (GMAW-AL) 5G Pipe            | 1 /3 | 4         | 166        |
| WELD2341  | GMAW Aluminum (GMAW-AL) 2G Pipe            | 0 /4 | 4         | 166        |
| WELD2342  | GMAW Aluminum (GMAW-AL) 6G Pipe            | 0 /4 | 4         | 166        |
| <b>Certificate Level Exit Points Are Below:</b> |  |      |           |            |
| WELD1110  | Occupational Orientation & Safety          | 2/0  | 2         | 75         |
| WELD1210  | Oxyfuel Systems/Cutting Processes          | 1/2  | 3         | 115        |
| <b>TCA-Thermal Cutter</b>                       |  |      | <b>5</b>  | <b>190</b> |
| WELD1110  | Occupational Orientation & Safety          | 2/0  | 2         | 75         |
| WELD1210  | Oxyfuel Systems/Cutting Processes          | 1/2  | 3         | 115        |
| WELD1410  | SMAW - Basic Beads/Fillet Weld             | 1/3  | 4         | 150        |
| <b>TCA-Welder Helper</b>                        |  |      | <b>9</b>  | <b>340</b> |
| WELD1110  | Occupational Orientation & Safety          | 2/0  | 2         | 75         |
| WELD1120  | Basic Blueprint, Metallurgy & Weld Symbols | 2/1  | 3         | 115        |
| WELD1210  | Oxyfuel Systems/Cutting Processes          | 1/2  | 3         | 115        |
| WELD1410  | SMAW - Basic Beads/Fillet Weld             | 1/3  | 4         | 150        |
| <b>TCA-Tack Welder/Fitter Helper</b>            |  |      | <b>12</b> | <b>455</b> |
| WELD1110  | Occupational Orientation & Safety          | 2/0  | 2         | 75         |
| WELD1210  | Oxyfuel Systems/Cutting Processes          | 1/2  | 3         | 115        |
| WELD2210  | GTAW - Basic Multi-Joint                   | 1/2  | 3         | 115        |
| PLUS  | GTAW Required Electives (12 Credit Hours)  |      | 12        | 498        |
| <b>CTS-Arc Welder-GTAW</b>                      |  |      | <b>20</b> | <b>803</b> |
| WELD1110  | Occupational Orientation & Safety          | 2/0  | 2         | 75         |
| WELD1210  | Oxyfuel Systems/Cutting Processes          | 1/2  | 3         | 115        |
| WELD2310  | GMAW - Basic Fillet Weld/Groove            | 1/3  | 4         | 150        |
| PLUS  | GMAW Required Electives (12 Credit Hours)  |      | 12        | 498        |
| <b>CTS-Arc Welder-GTAW</b>                      |  |      | <b>21</b> | <b>838</b> |
| WELD1110  | Occupational Orientation & Safety          | 2/0  | 2         | 75         |
| WELD1210  | Oxyfuel Systems/Cutting Processes          | 1/2  | 3         | 115        |
| WELD2110  | FCAW- Basic Fillet Welds                   | 1/3  | 4         | 150        |
| WELD2112  | FCAW Pipe 5G                               | 1 /3 | 4         | 166        |
| WELD2113  | FCAW Pipe 2G                               | 0 /4 | 4         | 166        |
| WELD2114  | FCAW Pipe 6G                               | 0 /4 | 4         | 166        |
| <b>CTS-Arc Welder-FCAW</b>                      |  |      | <b>21</b> | <b>838</b> |
| WELD1110  | Occupational Orientation & Safety          | 2/0  | 2         | 75         |
| WELD1210  | Oxyfuel Systems/Cutting Processes          | 1/2  | 3         | 115        |
| WELD1410  | SMAW - Basic Beads/Fillet Weld             | 1/3  | 4         | 150        |
| WELD1412  | SMAW- V-Groove BU/GOUGE                    | 0/3  | 3         | 115        |
| WELD1420  | SMAW - V-Groove Open                       | 1/3  | 4         | 150        |
| PLUS  | SMAW Required Electives (8 Credit Hours)   |      | 8         | 332        |
| <b>CTS-Arc Welder-SMAW</b>                      |  |      | <b>24</b> | <b>937</b> |