Tri-Rivers Adult Education Student Handbook: Appendix E

Welding, Fabrication, and Allied Processes Handbook



This copy of the Adult Education Student Consumer Handbook is current as of the Board Approval Date listed on the cover of the Handbook / Catalog.

Contents

Tri-Rivers Adult Education Student Handbook: Appendix E Welding, Fabrication, and Allied Processes Handbook.....2

Program Information.....3

Eligibility Requirements.....3

Admission Procedures/Requirements:.....3

Tuition Fees and Due Dates.....4

Certifications Available Within Program.....4

Curriculum.....5

Course Descriptions.....5

Classroom & Successful Progress.....7

Dismissal.....8

Grading Scale and Academic Progress.....8

Attendance Policy.....8

Academic Warning.....8

Probation.....9

Evaluation Of The Program.....9

Course Completion Criteria.....9

Program Information

Name: Welding, Fabrication and Allied Processes
Length: 5 months
Total number of hours: 650
Preparation: Entry-level employment
Credit awarded: Certificate

This 650-hour program provides training in a broad range of welding skills. A student will learn lab safety, weld print reading, oxy-fuel cutting, carbon arc cutting, and gouging. The course provides instruction in four of the most common welding processes: Shielded Metal Arc Welding SMAW, Flux Cored Arc Welding FCAW, Gas Metal Arc Welding GMAW (MIG), and Gas Tungsten Arc Welding GTAW (TIG). Students will also learn structural fabrication skills and be introduced to pipe welding and robotic welding. The program prepares a student for entry-level industrial welding employment.

Eligibility Requirements

- Complete the Welding Application and pay the required application fee.
- Submit an official high school transcript or GED showing proof of graduation.
- Meet one of the following academic readiness requirements:
    - Recent TRCC Graduate: Applicants who graduated from Tri-Rivers Career Center within the past two years are exempt from WorkKeys. Their official high school transcript will satisfy this requirement.
    - Associate or Bachelor's Degree: Applicants may submit an official transcript showing completion of an Associate or Bachelor's degree in place of WorkKeys.
    - WorkKeys: All other applicants must successfully complete the following WorkKeys™ assessments:
        - Workplace Documents: Level 4
        - Graphic Literacy: Level 4
        - Applied Math: Level 4

Tuition Fees and Due Dates

Each quarter's tuition is due **BEFORE** the first day of the quarter. Please refer to the Program Dates in the Appendix.

Certifications Available Within Program

Students will be allowed to test for American Welding Society certifications; actual certification receipt is based on successfully passing certification testing and completing certifying agency criteria.

American Welding Society (AWS) examination(s) and certification(s) will be offered based on each student's progress and aptitudes:

- AWS Welding Certification D1.1 3G SMAW
- AWS Welding Certification D1.1 4G SMAW
- AWS Welding Certification D1.1 3G FCAW
- AWS Welding Certification D1.1 4G FCAW
- AWS Welding Certification D1.1 3G GMAW
- AWS Welding Certification D1.1 4G GMAW
- AWS Welding Certification D1.6 3F GTAW
- OSHA 10 Safety Certification
- ACT National Career Readiness Credential

Curriculum

Curriculum Overview – The Welding, Fabrication, and Allied Processes program is five months long, and the student's day is 8:30 am – 3:30 pm Monday through Friday. Students will be provided with class schedules at the beginning of the program.

Math for Welders – 39 hours

Lab Safety – 13 hours

Oxy Fuel Cutting – 13 hours

Weld Print Reading – 26 hours

OSHA 10 Safety Certification – 13 hours

Employability – Soft Skills – 13 hours

SMAW – Shielded Metal Arc Welding – 91 hours

FCAW – Flux Cored Arc Welding – 91 hours

Structural Fabrication – 13 hours

Carbon Arc Cutting and Gouging – 13 hours

GMAW – Gas Metal Arc Welding – MIG – 91 hours

GTAW – Gas Tungsten Arc Welding – TIG – 91 hours

Intro to Pipe Welding – 78 hours

Intro to Lincoln / FANUC Robotic Welding – 52 hours

Employability – Job Search Techniques – 13 hours

Total Program Hours for Welding, Fabrication, and Allied Processes = 650

Course Descriptions

Math for Welders (39 hours)

This course reviews basic mathematics skills and provides practical exercises relevant to the welding field. Topics include whole numbers, common fractions, decimal fractions, measurement, percentages, and the metric system. The course is presented step-by-step, with activities that include drills and exercises focused on welding-related problems.

Lab Safety (13 hours)

This course reviews the safety precautions necessary for the safe operation of welding and fabrication equipment and general industry safety.

Oxy Fuel Cutting (13 hours)

Students will learn how to operate oxy-fuel gas cutting equipment safely.

Weld Print Reading (26 hours) This course provides instruction on interpreting and using the types of engineering drawings and prints commonly found in the welding trade.

OSHA 10 Safety Certification (13 hours)

This course covers the Occupational Health and Safety Administration's 10-hour general industrial safety training. It includes recognition, avoidance, abatement, and prevention of safety and health hazards in general industry workplaces.

Employability—Soft Skills (13 hours)

This course covers the Ohio Means Jobs and Ohio Job and Family Services curriculum for 21st-century skills for job readiness and soft skill training for career technology jobs.

SMAW – Shielded Metal Arc Welding (91 hours)

Students will gain an understanding of arc welding, welding safety, arc welding power sources, electrode classifications, and electrode selection. The focus is on developing the skills necessary to make shielded metal arc welds in all positions from 3/16" to 1" plate.

FCAW – Flux-Cored Arc Welding (91 hours)

This course explains flux-cored arc welding, welding safety, flux-cored arc welding power sources, types of shielding gases, electrode classifications, and electrode selection. The focus is developing the skills to produce quality fillet and groove welds on carbon steel using small and large diameter flux-cored electrodes, with and without shielding gas, in flat and horizontal positions.

Structural Fabrication (13 hours)

Students will learn basic welding-related fabrication skills. The course covers the safe use of hand and power tools, including layout, sawing, shearing, punching, and fabrication.

Carbon Arc Cutting and Gouging (13 hours)

This course allows students to safely cut and gouge structural steel material using the carbon arc.

GMAW—Gas Metal Arc Welding (91 hours)

Students will gain an understanding of gas metal arc welding, welding safety, gas metal arc welding power sources, types of shielding gases, electrode classifications, and electrode selection. The focus is developing the skills to produce quality gas metal arc welds on carbon steel, welding up to a 3/8” plate in single and multiple passes.

GTAW – Gas Tungsten Arc Welding (91 hours)

This course explains gas tungsten arc welding, welding safety, gas tungsten arc welding power sources, types of shielding gases, electrode classifications, and electrode selection. The focus is developing the skills to produce quality gas tungsten arc welds on carbon steel, welding up to 1/8” steel, stainless steel, and aluminum.

Intro to Pipe Welding (78 hours)

Students will develop the skills necessary for entry-level pipe welding. The course begins with practicing open root groove welds on plates using shielded metal arc welding and gas tungsten arc welding processes. Students then practice open root pipe welding in the 1G position on schedule 80 pipe using stick and TIG processes.

Intro to Lincoln / FANUC Robotic Welding (52 hours)

This course is designed to introduce students to Lincoln Electric Robotic Welding with the FANUC Arcmate Robot. Students must complete the FANUC foundational training module before beginning this class.

Employability—Job Search Techniques (13 hours)

This course prepares students for resume submission, interviewing, and follow-up. It is designed to teach job search strategies to prepare applicants for a successful job search.

Classroom & Successful Progress

The Welding, Fabrication, and Allied Processes course is very hands-on; students must observe all safety rules.

Dismissal

Dismissal from the program will occur for any of the following reasons:

- Persistent unsafe performance in the lab area, exhibited by behavior that might prove detrimental to self, patient, co-worker, and visitor.
- Dismissal may occur for any of the following reasons:
- Excessive absence or tardiness that is not reported according to regulation
- Total absenteeism of more than 10 percent per class. 5.Persistent tardiness
- Unexcused absence (Failure to notify school regarding absence)
- Violation of rules and regulations
- Falsifications of application materials
- Cheating

The student will be informed of dismissal in writing and, if possible, verbally. Students must also turn in all I.D. badges and see the financial aid administrator for a scheduled exit interview. Appeal Procedure – the Financial Aid Office will notify recipients who fail to meet these standards of the discontinuance of their aid. Appeals can be made in writing to the director of Adult Education within ten working days after receipt of the discontinuance notice. The Adult Director will respond in writing to denied appeals or award the recipient financial aid in the appropriate amount and type. See Policy related to Grievances Procedure in this handbook.

Grading Scale and Academic Progress
Grades are assigned using the following grading scale:
A = 93% - 100% Excellent
B = 85% - 92% Good
C = 76% - 84% Average
D = 70% - 75% Below Average F = Below 70% or Failure

Attendance Policy
Ninety (90) percent attendance is mandatory for the satisfactory completion of all classes. A student must maintain ninety percent attendance to be eligible to receive financial aid or a certificate of completion for the program. As good business practice and common courtesy, students should inform the instructor if they will be absent.
Classes missed must be made up, and the student must contact the instructor to make up for any missed work.

Academic Warning
A student will be given a written academic warning if they fall below the 90% attendance criteria during a class and their academic performance falls below the requirement. The student will also meet with the instructor and Program Coordinator.

Probation

- Probation is a measure utilized to encourage self-evaluation of progress in the program and adjustment of behavior accordingly. Reasons for probation include but may not be limited to:
- Unsafe performance exhibited by behaviors that might prove injuries to self, co-workers, and visitors.
- Unsatisfactory performance in laboratory areas as measured by an instructor and documented by the instructor
- Unsatisfactory performance in coursework as measured by an academic grade point average below passing or 70 percent at the midpoint of any Industrial Maintenance course and below 90% attendance.
- Non-compliance with school regulations.
- Unprofessional behavior (including, but not limited to, language and attitude) toward instructors, other students, or Tri-Rivers Career Center staff members.
- Probation is defined as a “trial period.” The program coordinator and faculty members may recommend that a student be placed on probation. The student will be notified in writing at a conference with the program coordinator and informed of the behaviors expected for satisfactory termination of the probationary period.

Evaluation Of The Program

The program's ongoing evaluation is essential for its continued growth and excellence. The review of the program of learning is conducted on an ongoing basis, and student input is utilized in this evaluation.

Students are periodically asked to complete an evaluation of the courses. They also evaluate the total program before graduation. This data is utilized in the planning of future classes and learning experiences. Students are urged to provide constructive comments throughout the program.

Course Completion Criteria

Attendance: 90% Grade: 70% or higher
Completion of WorkKeys Assessments at the Program
Specific Level: Workplace Documents-3, Applied Math-3, Graphic Literacy-3
Grades: A grade of 70% or higher in each of the individual Welding, Fabrication, and Allied Processes Courses (Students who fail a particular course can be considered a Completer/Non-Graduate if they have at least 90% attendance and a 70% overall grade in the overall program and obtain instruction-related employment in the Welding, Fabrication, and Allied Processes field).
Length of Time to Earn Certificate of Completion: Day Program – Five months Academic
Credential Awarded: Certificate of Completion