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# Master Plan of Instruction Applied Welding Technologies

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**MISSION:** Lake Technical Center's mission is to meet the educational needs of the community by offering a variety of high quality career-technical training opportunities.

*charting new directions*

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# **LAKE TECHNICAL CENTER APPLIED WELDING TECHNOLOGIES**

## **INTRODUCTION**

Applied Welding Technologies is an open-entry, open-exit, competency-based welding program with program entry four times each year.

In the program orientation, students learn shop safety regulations, tool crib procedures, record keeping, and the history of welding during the orientation. The students are then given a work sheet covering the first unit in basic welding. After all students have seen a demonstration of each unit, they practice all units in basic, advanced, oxyacetylene, heli arc, and micro wire welding. Upon completion of each block of work, students review all units until they can demonstrate at least 77% proficiency in the welding of all standard joints and in all standard positions. The display board in the welding shop is the standard.

Students will be evaluated by the instructor as to their skills, ability to work safely, properly work habits (e.g., appearance, dress, attendance and compliance with school and program policies and procedures).

After completion of all program competencies, students may elect to test for code certification on plate and pipe welding.

## **WELDING MISSION**

The mission of the Applied Welding program is to prepare students for employment or advanced training in the welding industry. This program also provides supplemental training for persons previously or currently employed in these occupations.

## **PHILOSOPHY**

We believe in assisting the student in the development of his/her ability to get along with others, show integrity, develop safe work habits both on and off the job, evidence personal and job cleanliness and to demonstrate the ability to become a better adjusted, more productive citizen.

## **TEST OF ADULT BASIC EDUCATION (TABE)**

The Florida Legislature requires that students without an associate's degree or higher be tested using the Test of Adult Basic Education (TABE) to determine levels of reading, math, and language skills. This test is given prior to entering the program and helps staff and student in determining the career fields in which each student can be successful.

According to Florida Department of Education rules, students who fail all or parts of the TABE may only retest using a different TABE version after at least 60 documented hours of remediation in the Vocational Preparatory Instruction (VPI) lab or 6 weeks, whichever is sooner. Students may not retake the same test version for six months. We therefore strongly recommend that students test early, especially for licensure programs, in order to allow time for remediation and retesting should the need arise.

Students who do not meet the State mandated minimum TABE exit scores for their program are considered to be enrolled under "Ability to Benefit" status (see catalog) and must begin attending remediation classes in the VPI lab, regularly attend VPI classes outside of their program hours and make acceptable progress as determined by the VPI instructor. Students who do not meet TABE scores may not receive a certificate of completion as per Florida Department of Education rules.

## **ADMISSION REQUIREMENTS**

Applicants must be at least 16 years of age and should be academically, physically, and emotionally capable of meeting the demands of the chosen program. Applicants make initial application through the Admissions Office. A minimum skills evaluation is part of the admission process. Co-enrolled and dual-enrolled students along with their parent/guardian must meet with the program Instructor prior to entering the program.

The Florida Legislature requires that prospective students be evaluated to determine levels of reading, math, and language skills. This evaluation helps staff and students in determining the career fields in which each student can be successful.

## **ESSENTIAL TRAINING TASKS**

### **Physical Requirements**

Ability to:

1. Reach.
2. Exhibit a high degree of manual dexterity.
3. Stoop.
4. Crouch and/or bend.
5. Exhibit a high degree of finger dexterity.
6. See (near acuity).
7. Lift 50 pounds or less.
8. Communicate.

### **Mental and Emotional Requirements**

Ability to:

1. Work with others.
2. Make decisions.
3. Cope with anger/hostility of others in a calm manner.
4. Cope with moderate to high levels of stress.
5. Cope with confrontation.
6. Cope with frustration.
7. Assist with problem resolution.
8. Demonstrate a high degree of patience.
9. Plan and organize daily activities.
10. Apply common sense understanding to carry out instructions furnished in both written and oral form.
11. Tolerate moderate noise level.
12. Measure accurately.
13. Work without close, direct supervision.
14. Work on multiple tasks and priorities.
15. Perform and complete tasks of relative complexity.
16. Perform basic mathematical operations.
17. Demonstrate mechanical skills.

## **GENERALPROGRAM INFORMATION**

### **Program Hours**

Full-time students attend class from 8:15 AM to 2:15 PM Monday through Friday with a 30 minute lunch period. This schedule provides 5-1/2 hours of instruction each day for a total of 27-1/2 hours per five-day week, excluding holidays and school breaks as outlined in the current school calendar.

### **Fees**

Tuition is charged for adult students at a reasonable rate that may vary slightly from year to year and is due prior to the first day of each semester. Current fee information is available from the Admissions Office. Tuition is waived for eligible high school dual-enrolled students. A semester lab fee is charged to cover the cost of consumable supplies welding used in the shop.

### **Equipment and Supplies**

Students are required to purchase the following equipment, supplies, and textbooks.

- Welding helmet
- Jacket, leather sleeves with bib
- Wire brush
- Burning goggles

- Grinding goggles
- Chipping hammer
- Tape
- Gloves
- Tip cleaner
- Flint lighter
- Pocket welding guide
- 100% cotton long-sleeved shirt
- 100% cotton pants

### **Textbooks**

- Welding Technology Fundamentals Text
- Welding Technology Fundamentals Workbook
- Blueprint Reading For Welders

### **Laboratory Activities**

Shop or laboratory activities are an integral part of this program and provide instruction in various processes and techniques of welding and fabrication skills, including thermal cutting, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW), Certification Test Preparation, and use of current industry standards, practices and techniques.

## **FINANCIAL AID**

Policies and guidelines for the administration of all financial aid are established according to federal and state law by a financial aid committee and published in the Financial Aid Policies and Procedures Manual. Applicants complete an information form, Free Application for Federal Student Aid, and furnish documentation needed to verify eligibility. More information on the application process may be obtained in the Financial Aid Office.

The Financial Aid Office will assist students, where possible, with access to financial support offered by federal agencies (U.S. Department of Education – Pell Grants, Department of Veterans' Affairs), other state and local agencies and local organizations (scholarships).

Financial Aid personnel are available daily to assist students with financial aid needs and requests. The Financial Aid Coordinator is also the liaison for all local agencies.

## **ATTENDANCE POLICY**

In Florida, public technical centers are on a clock-hour rather than a credit hour system and are thus required by federal financial aid guidelines to have and adhere to an attendance policy. In addition, students should understand that in-state tuition only pays for approximately 25% of the cost of education, with the state taxpayers contributing the other 75%. The burden is on the school to ensure that these funds are spent in the most effective fashion, e.g., that students make good use of the available resources.

### **Absences**

To develop appropriate work ethics, Lake Tech students are expected to attend all class sessions. As is expected in the workplace, when it is necessary to be absent due to illness or emergency situations, all students are to notify the instructor on or before the date of absence.

Lake Technical Center's *Student Responsibilities*, available in the current school catalog, states that, "The expectation of the Lake County School Board is that all students will be in attendance each day of the school year." The student attendance code for each postsecondary program is consistent with industry standards as recommended by the program advisory committee and approved by the administration of Lake Tech.

Campus attendance is kept via a computerized system. It is the responsibility of the student to **log in and out** in order to receive credit for class time. This allows the school to keep accurate attendance records for the actual number of hours and minutes attended.

Students with excessive absences will be subject to penalties such as loss of financial aid, lower grades, withdrawal from the program, and prohibition from re-enrollment in the next grading period.

If a student has missed 20% of scheduled classes by the middle of a first grading period, or at any cumulative time thereafter, the student will sign an acknowledgement that he/she has been notified by the instructor that continued absences may pose a threat to grades and program enrollment. School Intervention Team meetings will be held, as necessary, in attempts to alleviate issues resulting in excessive absences and to counsel the student of possible alternatives and consequences.

Students who are absent, excused or unexcused, for six (6) consecutive class sessions will be withdrawn from membership in their program. A withdrawn student must wait until the next enrollment period to re-register. A Student Intervention Team will review all applications for reenrollment.

Only regularly scheduled class hours will be reported for attendance. Make-up time will not be accepted.

### **Tardiness**

Students are expected to be in their seats promptly in the morning, after break, and after lunch. Students must notify the instructor before the start of class of any anticipated tardiness and an expected arrival time.

## **GRADING POLICY**

The grading policy for this program is as follows:

90-100	Excellent
77- 89	Passing
< 77	Failing

Lake Technical Center is a postsecondary institution designed to provide trained individuals to industry. The grading scale for this program reflects industry standards, as recommended by the advisory committee and approved by the administration of Lake Technical Center. Dual-enrolled students will follow the grading policy of the Lake County School Board for the purposes of graduation credit; however, all students must meet the program minimum grade requirements in order to receive a certificate.

In order to successfully complete the Welding Program, the student must achieve a minimum 77% passing rate.

Grades will be based on three areas:

1. Skills - production (count for 33 1/3% of the grade)
2. Knowledge - exams, quizzes, class participation (count for 33 1/3% of the grade)
3. Attitude - behavior, cooperation (count for 33 1/3% of the grade)

## **DRESS POLICY**

As stated in the Student Responsibilities approved by the Lake Technical Center Charter School Board and available in the current school catalog, students who attend Lake Technical Center shall dress in a manner appropriate for the job in which they are receiving training, including any special protective gear and professional uniforms. The postsecondary program student dress code is consistent with industry standards as recommended by the program advisory committee and approved by the administration of Lake Technical Center.

### **Minimum Program Dress Code**

1. Pants shall be worn fastened and at the waist. Pants should be dark colored, straight legged or boot cut (jeans are acceptable). Baggy pants are not permitted in any program area. Baggy pants are considered to be more than one size larger than the individual's waist. Shorts are not permitted.
2. Shoes must meet safety/industry standards. Sandals are not permitted
3. Program logo school T-shirts are to be worn.
4. Clothing should be clean and in good repair.
5. For safety reasons, shorts, loose clothing, jewelry, and loose hair below the collar are not allowed.
6. Hats are only permitted in shop areas and must meet the instructor's specifications for safety and appropriateness.

## PLAN OF INSTRUCTIONAL PRACTICES

### Methods of Teaching

Teaching Methods .....	Associated Activities
Demonstrations .....	Manipulative Operations
Group Instruction .....	Manipulative Operations/Related technology
Shop Talk .....	Related Information/Safety and Motivation
Individual Instruction .....	Manipulative Operations/Remedial Work

### Teaching Aids

- Films
- Charts
- Transparencies

### Cooperative Education

Cooperative training is available for students and coordinated by the program instructor. Cooperative training is for students who have shown competence in program training, which indicates readiness for placement in an on-the-job program. High school students participating in the cooperative job placement program must be in at least the eleventh grade.

Students who do not function satisfactorily on the job may be returned to the program for additional training or when the cooperative agreement is terminated at the request of the student, the parent, the employer, or the program instructor.

Additional information regarding co-op opportunities may be obtained from the program instructor.

Veterans will be accepted into the program in accordance with the Department of Veterans Affairs policies.

### Job Shadowing

Job shadowing experiences or volunteer experiences are available to students who may benefit from the experience.

These experiences are designed to give the student actual hands-on experience doing a variety of welding related tasks. Length and type of experiences will vary. The program instructor determines appropriateness of the experience. Additional information regarding job-shadowing experiences may be obtained from the program instructor.

### Student Job System

1. Tool Room Foreman
  - a. Checks out tools
  - b. Issues welding supplies
2. Safety Foreman
  - a. Checks fire extinguishers
  - b. Keeps safety lanes painted
3. Shop Foreman
  - a. In charge of cleanup and break time
  - b. Helps with student problems

## JOB DESCRIPTION

The welder constructs, erects, installs, and repairs all types of metal fabrication, machine frames, pipe lines, and pressure tanks. He/she used oxyacetylene, electric and, Heli arc, micro wire, plasma arc cutter, and plasma arc welding machines.

He/she studies blueprints and sketches to determine the type of electrodes and metals to use in construction and measurements required.

He/she prepares layouts using tapes, square, and straight edge and marks cutting and assembly lines on material using pencil, soapstone, and metal markers.

The work of the welder is active and sometimes strenuous, but exceptional physical strength is not required. Prolonged standing as well as climbing and squatting is often necessary. Good physical condition, eyesight, and the ability to communicate are important.

The welder works both inside and outside in heat and cold and is subject to extreme temperature changes. The work may be performed under wet or humid conditions. Job conditions may be noisy.

Welders risk injury from slips and falls, contact with sharp metal, burns, spark radiation from the arc fumes, electric shock, and grinding machines.

Welders should always have good ventilation and stay as dry as possible.

## **GENERAL SCHOOL INFORMATION**

### **Campus Safety**

Basic safety standards, which will include fire drills, weather drills, lockdowns, equipment usage, and traffic regulations, will be covered in the program orientation and within the program as applicable. These basic safety standards will be reinforced throughout the program enrollment. Students should immediately report any safety concerns to an instructor or administrator. Please refer to the school catalog for more campus safety information.

### **Competency-based Instruction**

Any student who enters a LTC program with previous experience or educational background that would enable the student to successfully complete a test of competence in any area may, with the permission of the instructor, complete a test to measure that competence.

### **Food and Drink in Program Areas**

Food and drinks other than water are not allowed in classroom and laboratory areas. Water is permitted in these areas provided it is in a closed, covered container that will not spill if the container is tipped. This is to protect the equipment and furnishings in the classroom and laboratory areas.

### **Leaving Campus During School Hours**

All students who leave campus due to sickness or personal reasons during the scheduled class time are required to inform their program instructor. High school students may leave campus by checking out in the Admissions Office with parental permission and an instructor referral.

### **Lunch**

Food services are provided on the main campus by the Culinary Institute and are available during breaks and lunch. Adult students may leave the LTC campus during the scheduled 30-minute lunch break as long as they return to the program on time. High school students may not leave the LTC campus during the lunch break.

### **Parking Regulations**

Students may park only in the south parking lot in spaces not designated as staff or customer service parking. For safety, loitering in or around vehicles once the vehicle is parked is not allowed and a 10 mph speed limit is enforced. In consideration of the neighbors and classes in session, loud music in vehicles on campus is prohibited.

### **Smoking**

Smoking is only allowed in the designated smoking area. Please dispose of smoking materials in the designated containers.

## **PROGRAM OBJECTIVES**

See the attached Florida Department of Education curriculum framework for objectives and competencies.