



**TRINITY VALLEY COMMUNITY COLLEGE  
NON-CREDIT COURSE SYLLABUS**

**Course Rubric, Title: WLDG 8021 Introduction to Welding Fundamentals**

**Instructor Name:** Tom Sheram

**Class Location:** Welding Building

**Office Hours:** MW 7:30 am- 8:00 am 12:00 pm – 1:30 pm 3:00 pm – 5:00 pm  
TTH 7:30 am – 8:00 am 12:00 pm – 1:30 pm  
Friday 7:30 am – 1:30 pm

**Office Location:** Welding Building

**Office Phone & Alternate Phone #'s:** 903-675-6374

**TVCC E-mail Address:** [tsheram@tvcc.edu](mailto:tsheram@tvcc.edu)

**Electronic communication:**

TVCC students are REQUIRED to use either their TVCC Blackboard account or their TVCC email account for all electronical communication. In order to ensure the identity of the student communicating electronically, TVCC faculty will not reply to student communication that is sent through an email account other than their TVCC issued email account or Blackboard account.

**Non-Attendance and Financial Aid:** If you are receiving financial aid, federal regulations require you to have begun attending the courses for which you are enrolled on or before the census date (e.g., 12th day of each fall and spring semester). Attendance in an online course is verified by substantial participation in the course on or before the census date. TVCC defines substantial participation as logging in to the online course AND completing/participating in at least one requirement of the course. Students documented as "not attending" a course upon the census date are assumed (for financial aid purposes) to have NOT begun attendance for that course, and this may negatively affect financial aid disbursements.

**Course Description:** Introduction to Welding Fundamentals will introduce the fundamentals of equipment used in oxyacetylene and arc welding, including welding and cutting safety, basic oxyacetylene welding and cutting, basic arc welding processes and basic metallurgy.

**Course Co- or Pre-Requisites:** None

**Textbook(s) & ISBN:** Welding Technology Fundamentals fourth edition by Bowditch, Bowditch & Bowditch, The Goodheart-Wilcox Company, Inc. Tinley Park, Illinois

**Required/Recommended Reading(s):** None

**Required Materials:**

Notebook and writing implements  
Tape measure (push/pull type 12' minimum 1/16 divisions)  
Welding hood with at least a #9 lens with protective covers  
Cutting goggles or glasses (lens shade of #4 or #5)  
Welding gloves  
Welding cap  
Pliers-used for handling hot metal  
Leather welding jacket/sleeves  
Tip cleaner

**Upon completion of this course, the student should demonstrate a master of the following learning outcomes:** Students will demonstrate a working knowledge of oxyacetylene and arc welding equipment. This will include the proper and safe set up of equipment and its use. Students will demonstrate the ability to adjust equipment by setting the proper operating pressures for oxyacetylene welding and cutting based upon material thickness being used. Students will demonstrate the proper current and amperage settings for arc welding based upon the type and thickness of material to be welded. Student will be able to distinguish various types of metals by appearance and manufactures codes. Students will be able to demonstrate the properties of metals including physical properties, chemical properties and mechanical properties.

**Course Requirements:** Demonstrate the ability to correctly and safely set up and use oxyacetylene equipment for welding and cutting.

Perform oxyacetylene welding in the flat position with various size welding tips, electrodes on various thicknesses of metal.  
Perform oxyacetylene cutting on various thickness of metal making a straight line cut, circle cut, curved cut and metal washing with a washing tip.  
Demonstrate the ability to correctly and safely set up SMAW and GMAW/FCAW equipment for welding.  
Perform various welds using various electrodes (6013, 6011, 6010, 7018, ER70S-6) in various sizes (3/32, 1/8, 5/32 and .035) on various thicknesses of metal.  
Identify various types and sizes of metals based upon physical, chemical and mechanical properties.

### **Outline of Course Schedule:**

#### Introduction to Welding

1. What is welding?
2. Where welding is used
3. Types of welding
4. Electrode types & uses

#### Oxyacetylene Welding and Cutting

1. Equipment identification and uses
2. Assembly of equipment for welding
3. Assembly of equipment for cutting
4. Gasses used in oxyacetylene welding and cutting
5. Safety practices for handling gas cylinders
6. Equipment adjustments
  - a. Regulator adjustments
  - b. Torch adjustments
7. Safety practices for cutting and welding
8. Oxyacetylene welding techniques
9. Oxyacetylene cutting techniques

#### Arc Welding

1. Types of Arc Welding
2. Uses
3. Electrodes and their uses
  - a. Types and size of electrodes

- b. Current selection and amperage ranges
- c. Electrode characteristics

### Arc Welding Equipment

- 1. SMAW machines
  - a. Parts identification
  - b. Set up of machine
  - c. Adjustment of machine
  - d. SMAW techniques
- 2. GMAW/FCAW machines
  - a. Parts identification
  - b. Set up of machine
  - c. Adjustment of machine
  - d. GMAW/FCAW techniques
- 3. SAW machines
- 4. GTAW machines

### Metals and their properties

- 1. Types of metals
- 2. Physical properties (color, density, melting point)
- 3. Chemical properties (corrosion resistance, oxidation resistance)
- 4. Mechanical properties (strength, ductility, brittleness, toughness, hardness, grain size)

### **Classroom Policies:**

Attendance: In order for students to obtain the most from any course, they must be present. The absence policy found in the Trinity Valley Community College Catalog will be complied with for this course. It will be the students responsibility to enquire about missed assignments, quizzes and test.

**Students who are more than five minutes late for class will be counted as absent. Arriving late for class and leaving early will be noted and reflect on the students participation grade.**

**Students may be dropped from the class after the student has reached six absences or for failure to participate in class/shop assignments.**

**Cell phones are not allowed in the classroom or shop area.**

All students are required to participate in cleaning the shop area after each class.

### Evaluation Methods:

Written assignments/daily work

Quizzes

Test

Final Exam

Attendance & Participation

Grading System: Grades will be determined by the following,

**Lecture 30%**

Written assignments/daily work

Quizzes & Test

Final Exam

Attendance & Participation

**Shop/Lab 70%**

Shop/Lab assignments

Practical

Attendance & Participation

**ATTENDANCE & PARTICIPATION**

Each student will begin the class with a 100 in attendance & participation.

The following will be the point deduction for being absent:

0-3 absences 0 deduction

After a student accumulates 3 absences, the following method will be used to calculate an attendance grade:

Number of class periods minus total absences divided by total class periods.

Example: 30 class periods minus 5 absences = 25 divided by 30 = 0.83, this indicates an 83% attendance rate which equates to an attendance grade of 83.

Participation is a must in all welding classes. This is the students contribution to classroom/shop discussions and the amount of shop work that is completed. It is obvious that a student will not be able to participate if they are absent, choose to leave class early or choose not to work while in class/shop. Students who choose not to work in the shop will have a grade deduction. As the instructor, I will base a portion of your attendance and participation grade on the amount of work attempted and completed.

**Cheating/Plagiarism:**

Scholastic dishonesty shall include, but not be limited to, cheating on a test, plagiarism, and collusion. "Cheating on a test" shall include

- (a) Copying from another student's test paper
- (b) Using test materials not authorized by the person administering the test

- (c) Collaborating with or seeking aid from another student during a test without permission from the test administrator
- (d) Knowingly using, buying, selling, stealing, or soliciting, in whole or in part, the contents of an un-administered test
- (e) The unauthorized transporting or removal, in whole or in part, of the contents of the unadministered test
- (f) Substituting for another student, or permitting another student to substitute for oneself, to take a test, and
- (g) Bringing another person to obtain an unadministered test or information about an unadministered test.

“Plagiarism” shall be defined as the appropriating, buying, receiving as a gift, or obtaining by any means another’s work and the unacknowledged submission or incorporation of it in one’s own written work.

“Collusion” shall be defined as the unauthorized collaboration with another person in preparing written work for fulfillment of course requirements. Any student who is found to be in violation of scholastic dishonesty will receive a grade of “0” on the course work involved.

**Drop Policy: Students may be dropped from the class after the student has reached six absences or for failure to participate in class/shop assignments.**

A student may withdraw (drop) from a course and receive a grade of “W” at any time during a given semester subject to the last day to receive a “W” deadline specified in the TVCC schedule or catalog. (Please see information below on Developmental Course policy).

**Attendance in Developmental Courses/Developmental Drop Policy:**

If a student does not receive the minimum required scores on an approved TSI test, the student will be required to enroll and attend prescribed developmental courses and remain in those courses until passing test scores are submitted or the developmental sequence is successfully completed.

Students who accumulate excessive absences in any developmental classes are subject to being dropped from all courses in which they are enrolled.

**Research Resources:**

The student is encouraged to use the TVCC Libraries as research resources for this course. Students can search the TVCC Library Resource Center holdings through the on-line catalog. Electronic library resources provide access to full-text and abstract articles as well as links to a variety of remote research tools. The physical library contains a specialized collection of research materials specifically chosen to support the degrees and courses offered at TVCC. Students with research questions or questions about library services are encouraged to email their question to [lrc@tvcc.edu](mailto:lrc@tvcc.edu).

**Technology Resources/Access:**

Each student, employee, or guest with an information technology (IT) account shall be responsible for all use of the account. All accounts shall be for use by a single individual – the person for whom the account was approved or assigned. This includes e-Course accounts as well as TVCC issued email accounts. Sharing or loaning accounts is strictly prohibited and violates TVCC Board Policy CT (LOCAL).

**Additional Information:**

**Student’s Responsibility:**

This syllabus contains information, policies and procedures for a specific course. By enrolling, the student agrees to read, understand, and abide by the rules, policies, regulations, and ethical standards of Trinity Valley Community College as contained in the current catalog and schedule of classes.

**Student Evaluation of Courses/Faculty:**

Evaluation is an important component in promoting continuous improvement, enhancing student learning, and achieving excellence in the educational process. Therefore, TVCC administers student course evaluations every semester. Students are encouraged to complete the course evaluations for all of their courses through the student Cardinal Connection portal. Notification of evaluation availability will be made to all students through the TVCC email accounts.

When completing the evaluation, students will rate the course by responding to the following prompts:

- The instructor relates the importance of the subject matter to real life.

- The instructor is very knowledgeable of the subject matter.
- The instructor encourages questions and discussions from students.
- The instructor makes class requirements clear.
- The instructor gives class assignments (tests, projects, presentations, etc.) that measure what was covered.
- The instructor's teaching methods are effective in helping me learn.
- The instructor expects students to take responsibility for their learning.
- The instructor establishes a climate of respect.
- The instructor is well organized and prepared for each class.
- The instructor is available to me on matters pertaining to the class.
- The instructor is reliable in meeting class (leave blank for online courses).
- The instructor normally starts class on time (leave blank for online courses).
- The instructor has challenged me to think.

### **Affirmative Action:**

TVCC is an affirmative action/equal opportunity institution which provides educational and employment opportunities on the basis of merit and without discrimination or harassment in full compliance with the Civil Rights Act of 1964, as amended; the Rehabilitation Act of 1973 (Section 503,504); Americans with Disabilities Act, as amended, Title IX of the Educational Amendments of 1972; the Vietnam Era Veterans Assistance Act of 1974; Article 5221k V.A.C.S.; and Executive Orders 11246 and 11758.

### **Title IX of the Education Amendments:**

TVCC prohibits discrimination, including sexual harassment and retaliation, against any student on the basis of race, color, religion, gender, national origin, disability, or any other basis prohibited by law. Any student who believes that he or she has experienced prohibited conduct or believes that another student has experienced prohibited conduct should immediately report the alleged acts to an instructor, counselor, administrator, or the Title IX Coordinator. TVCC has designated the Director of Human Resources/Title IX Coordinator as the individual who is responsible for coordinating its efforts to comply with Title IX of the Education Amendments of 1972, as amended. Contact information is:

*Director of Human Resource/Title IX Coordinator*



*Office Phone: 903-675-6215*

### **American with Disabilities Act (ADA)**

Trinity Valley Community College provides equal opportunities for academically qualified students with disabilities and ensures access to a wide variety of resources and programs. The passage of Section 504, Federal Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990 requires that the college make certain special arrangements for students with disabilities such as moving classes to accessible locations when necessary, allowing the use of tape recorders, sign language interpreters, or other educational auxiliary aids, making special test arrangements, and other accommodations. The college will make reasonable accommodations for qualified students with a diagnosed physical and/or learning disability who have been admitted to the college and request accommodations.

Students with disabilities who wish to request accommodations should notify the Disability Services Office on their campus. In accordance with federal law, a student requesting accommodations must provide documentation of his/her disability to the Disability Services counselor. For more information, please visit the Disability Service Office on your campus or contact Melinda Berry at 903-675-6224 or email [mlberry@tvcc.edu](mailto:mlberry@tvcc.edu). For additional information, please visit: <http://www.tvcc.edu/guidance/studentswithdisabilities.aspx>.