



TOTAL CREDITS 3

PREREQUISITE(S): STM 015

**1. PHILOSOPHY/GOALS:**

To provide a basic level of knowledge and skill related to the Oxy-Acetylene fusion welding and flame cutting process.

**II. STUDENT PERFORMANCE OBJECTIVES (OUTCOMES):**

Upon successful completion of this course the student will:

- 1) Demonstrate a working knowledge of the construction, operating principles, set-up and minor servicing requirements for the oxyacetylene welding and flame cutting processes along with their respective equipment.

**III. TOPICS TO BE COVERED:**

Approximate Time  
Frames (Optk}nal)

- 1) Course Introduction and Orientation
- 2) General Welder Safety (Oxyacetylene)
- 3) Construction of Oxyacetylene Fusion Welding and Flame Cutting Equipment
- 4) Pressurizing and Operating a Welding Torch
- 5) Backfire, Burnback and Flashback
- 6) Types of Oxyacetylene Flame and Typical Uses
- 7) Fusion Welding Exercises on 16ga and 1/8 material
- 8) Identification and Selection of Common Filler Rods  
(\*Shop Assignment\*)
- 9) Describe, Identify and Correct Common Fusion Weld Faults and Discontinuities
- 10) Correct Set-up and Safe Operation of Oxyacetylene Flame Cutting Equipment
- 11) Flame Cutting Exercises on Scrap Metal
- 12) Fusion Welding Exercises on Small Diameter Pipe
- 13) Final Theory Test

Note: Course materials discussed and/or explained during any and all shop demonstrations are subject to evaluation via theory testing. Students are therefore responsible for the content of all shop demonstrations and or discussions.

**IV. EVALUATION METHODS:** (INCLUDES ASSIGNMENTS, ATTENDANCE REQUIREMENTS, ETC.)

**General Assessment**  
**A = 85 TO 100%**  
**B = 75 TO 84%**  
**C = 60 TO 74%**  
**D = SOTO 59%**  
**F = 0 To 49%**

**Final Mark\***  
Shop Assignments 70%  
Theory Test 30%  
Ongoing Safety Evaluations  
*ii* Attendance (\*\*See Attached)  
TOTAL 100%

Note: All material covered in shop lectures and demonstrations may be included in the final theory test.

**V. PRIOR LEARNING ASSESSMENT:**

Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following:

1. The successful challenge of all three 'Shop (Welding) Assignments', plus the successful challenge of a written gas welding safety test compatible to the level of knowledge provided to apprentices taking this course of study.  
- OR -
2. Written proof of at least three (3) years of competent trade experience involving the actual welding of pipe and pressure vessels or other similar work.

**VI. REQUIRED STUDENT RESOURCES**

C.S.A. Approved (High Cut) Safety Work Boots  
C.S.A. Approved Safety Glasses (Impact Resistant)  
Work Wear  
Notebook, paper, pen or pencil

**VII. SPECIAL NOTES**

Students with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities, etc.) are encouraged to discuss required accommodations confidentially with the instructor.

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students.

\* Student evaluations concerning the \*Final Mark\* are further affected by the conditions set forth in the printed handout 'Welding Department Guidelines'. Be sure to obtain a copy from your instruction.

\*\* Special guidelines for attendance and ongoing safety evaluations are included in the above Welding Department Guidelines.