

## COURSE INFORMATION

COURSE PREFIX/NO: **WLD 154**

COURSE TITLE: **Pipe Fitting and Welding**

LEC HRS/WEEK: 3.0

LAB HRS/WEEK: 3.0

CREDIT HRS/SEMESTER: 4.0    [DL ATTENDANCE/VA STATEMENT](#)    [TEXTBOOK INFORMATION](#)

## COURSE DESCRIPTION

This is a basic course in fitting and welding pipe joints, either ferrous or non-ferrous using standard processes.

## COURSE COMPETENCIES

Upon successful completion of this course, the student should be competent to perform the following tasks:

- Cut pipe by hand and by machine to a 37.5 degree and prepare for welding
- Weld pipe in a fixed position with an open root fit and E6010 electrode for root pass and E7018 electrode for filler and cap passes
- Produce templates for making pipe fittings and piping offsets
- Be able to use proper terminology in verbal communication concerning Pipe Fitting and Pipe Welding.

## MINIMAL STANDARDS/PERFORMANCE OBJECTIVES

Note: The instructor will give the student instruction for the control of an arc and puddle during the course before testing the student. The instructor will give the student specifications for quality welds and cuts during the course before testing the student. These specifications will include, but will not be limited to the following items: penetration of root pass, uniformity of cover pass with no undercut. Inspection will be a visual nature by the instructor.

Given lectures, demonstrations, specifications, and carbon steel pipe, the student will fit up and weld out pipe to meet specifications in the following positions:

- a. 1G-Rotated Position
- b. 2G-Horizontal Position
- c. 5G-Vertical Position
- d. 6G-45 degree Fixed Position

Given lectures, demonstrations, specifications, and stainless steel pipe, the student will fit up and weld out pipe to meet specifications in the following positions:

- a. 1G-Rotated Position
- b. 2G-Horizontal Position
- c. 5G-Vertical Position
- d. 6G-45 degree Fixed Position

Given drawing equipment and specifications, the student will draw templates to meet specifications for the following pipe fittings:

- a. 1G-Rotated Position
- b. 2G-Horizontal Position
- c. 5G-Vertical Position
- d. 6G-45 degree Fixed Position

Given guidelines of appropriate work attitudes, the student will exhibit proper behavior as identified in the Evaluation Strategies/Grading section of this outline.

## COURSE REQUIREMENTS

Students are responsible for attaining competencies through completion of the following course requirements:

### Attendance

Students will be bound by the policies stated in the York Technical College Student Handbook. "Students must attend 80% of the hours assigned the class for a quarter to receive credit for the course."

In case a student does miss a class, the student is responsible for obtaining the material that was covered during the absence.

If a student is aware that a class will be missed, then the student should notify the instructor at the earliest possible date.

If a student misses a test because of illness or urgent emergency, it is the responsibility of the student:

Notify the instructor prior to the class period, or at the earliest possible date. At that time a new date for a make up test can be scheduled.

Students with unexcused absences during tests will be allowed to take a make up test at the discretion of the instructor.

The student has the burden to be sure that some arrangement was made with the instructor for taking a make up test.

### Participation in class discussions

### Completing assigned lab projects and tests

### Shop Requirements:

The student will adhere to all safe behavior codes during shop use. These are, but not limited to, the following:

1. Safe work habits as outlined by the instructor
2. Proper dress codes as outlined by the instructor
3. Proper conduct as outlined by the instructor
4. Proper maintenance of work area

### Academic Honesty:

"York Technical College adheres to the South Carolina TECH Student Code, approved by the State Board for Technical and Comprehensive Education on March 13, 1974 (revised last April 25, 1984). Copies of this code are available in the Library and from Student Services. ...Any student caught cheating or involved in any other academic dishonesty will be given a grade of zero and will be subject to further disciplinary action."

## EVALUATION STRATEGIES/GRADING

The grading scale will be the standard for York Technical College:

### Grade Points

A 90 - 100

B 80 - 89

C 70 - 79

D 60 - 69

F 0 - 59

### Evaluation Method Total Points

Tests (minimum of 3) 25%

Lab/Shop 50%

Work Attitude 25%

1. Participation
2. Cooperation
3. Appearance
4. Effort
5. Safety
6. Responsibility
7. Professionalism
8. Attendance

## ENTRY LEVEL SKILLS

The student must be able to produce quality welds in all positions using SMAW and GTAW processes. He must be able to demonstrate a good math background.

## PREREQUISITES

WLD 108, WLD 113, and WLD 152

## CO-REQUISITES

EGT 117

## TOPIC/CONTENT OUTLINE

- A. Details of Cutting Pipe
- B. Details of Welding Pipe in all Positions
- C. Template Development

## METHODS OF INSTRUCTION

This course consists of 3 hours of class periods and 3 hours of laboratory. The class instruction includes lectures, demonstrations, discussions, and tests. The lectures are given while drawing on the blackboard, using overhead projections, or video tapes.

The lab consists of exercises that are self-paced using welding shop equipment. Instructors will work with each individual student to assure quality work.