Print Date: 7/10/14

Course Objectives/Course Outline
Spokane Community College

Course Title: Oxy-acetylene Welding
Prefix and Course Number: AGGEN 153

Course Learning Outcomes:
By the end of this course, a student should be able to:

- Perform common maintenance and repair jobs using oxy-acetylene equipment
- select proper equipment for a given job
- set up, test store and use oxy-acetylene welding equipment safely
- determine when a broken part should be repaired or replaced
- determine when a part should be referred to a professional for welding
- weld mild steel with oxy-acetylene equipment in the flat, horizontal and vertical positions
- bronze weld mild steel and cast iron
- cut shafts, holes, nuts and bearings using oxy-acetylene equipment
- identify desirability and procedures used in hard surfacing
- use oxy-acetylene to weld aluminum, spray facing, soldering and sliver brazing

Course Outline

I. Introductory Concepts
   A. Overview
      1. Definitions
      2. History
      3. Uses
      4. Safety
      5. characteristics of gases
   B. Equipment Setup
      1. Leak Testing
      2. Torch and Flame Adjustments
      3. Puddle Formation
      4. General Techniques

II. Fusion Welds
   A. Flat Beads without Rod—12 Gauge Metal
   B. Flat Beads with Rod—12 Gauge Metal
   C. Flat Butt Welds
   D. Horizontal Beads with Rod
   E. Horizontal Butt Welds
   F. Vertical Beads with Rod
   G. Vertical Butt Welds
   H. Flat Fillet Welds—16 Gauge Metal
   I. Horizontal Fillet Welds—16 Gauge Metal
   J. Vertical Fillet Welds—16 Gauge Metal

III. Bronze Welds
    A. Tinning Exercise
    B. Flat Beads
    C. Lap Joint
    D. Cast Iron
IV. Miscellaneous
    A. Flame Cutting
        1. Plate
        2. Sheet Metal
        3. Pipe
        4. Irregular Shapes
    B. Metal Identification and Properties
    C. Distortion and Distortion Control
    D. Hard Surfacing—Tubular Rod
    E. Hard Surfacing—Power Torch
    F. Aluminum Welding—Flux-cored Rod