**Alexandria Technical and Community College**

**WELD 1603: Gas Metal Arc Welding I**

**A. COURSE DESCRIPTION**

Credits: 4  
Lecture Hours/Week: 1  
Lab Hours/Week: 3  
OJT Hours/Week: *.*  
Prerequisites:  
WELD 1600 - Introduction: Safety and Codes (Number of Years Valid: 5)  
Corequisites: None  
MnTC Goals: None  

Learners receive instruction in theory, equipment, and technique, and have an opportunity to practice skill development with the GMAW-SC welding process (MIG, short-circuiting transfer) on mild steel plate. Flat position welding is emphasized and learners are introduced to horizontal and vertical position welding. The goal is to perform welds in the flat position to an industry acceptable level of quality for entry-level employment, as demonstrated by the successful completion of an AWS D1.1 Structural Code welding certification. The primary emphasis is on learners conducting supervised practice to achieve the required skill level. Corequisite: WELD1600.

**B. COURSE EFFECTIVE DATES:** 08/25/2008 - Present

**C. OUTLINE OF MAJOR CONTENT AREAS**

1. Understand GMAW process.  
2. Understand electrical theory.  
3. Perform GMAW machine maintenance.  
4. Display knowledge of GMAW safety.  
5. Identify GMAW equipment.  
7. Identify different filler metals.  
8. Perform different GMAW modes of transfer.  
9. Display GMAW factors of control.  
10. Demonstrate AWS guided band test.  
11. Complete 1G GMAW certification.

**D. LEARNING OUTCOMES (General)**

1. The learner will demonstrate knowledge of process theory, principles, application, and equipment set-up.  
2. The learner will demonstrate the skills required for producing welds to entry level industry standards by the successful completion of a certification test.  
3. The learner will demonstrate knowledge of correct welding technique.  
4. The learner will develop proper welding technique and hand-eye coordination.

**E. Minnesota Transfer Curriculum Goal Area(s) and Competencies**

None
F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted