Alexandria Technical and Community College

WELD 1610: Metallurgy and Materials

A. COURSE DESCRIPTION
   Credits: 2
   Lecture Hours/Week: 2
   Lab Hours/Week: *.*
   OJT Hours/Week: *.*
   Prerequisites: None
   Corequisites: None
   MnTC Goals: None
   This course is designed to equip learners with a basic knowledge of metallurgy as it relates to welding, and a level of familiarity with commonly welded materials. Instruction is provided in the areas of mechanical properties of materials, alloys and their properties, metal classification systems, applications of various metals, effects of welding on metals, weldability of metals, and procedures for welding hard-to-weld metals.

B. COURSE EFFECTIVE DATES: 01/12/2009 - Present

C. OUTLINE OF MAJOR CONTENT AREAS
   1. Define physical and mechanical properties of metals.
   2. Understand the differences and weldability of materials.
   3. Understand how to handle and properly process different metals.
   4. Identify problems during welding processes and how to fix them.
   5. Understand alloys and what can be matched together.
   6. Identify the differences of materials alloys.

D. LEARNING OUTCOMES (General)
   1. The learner will demonstrate basic knowledge of the properties and classifications of metals.
   2. The learner will demonstrate basic knowledge of the metallurgical effects of welding, and how to control these effects with proper weld procedures.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   None

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted