Alexandria Technical and Community College

MFGT 2501: Sustainable Manufacturing

A. COURSE DESCRIPTION
   Credits: 3
   Lecture Hours/Week: 3
   Lab Hours/Week: *.*
   OJT Hours/Week: *.*
   Prerequisites: None
   Corequisites: None
   MnTC Goals: None
   This course provides the learners with an understanding of the knowledge and application skills needed in sustainable manufacturing. The course concentrates on Problem Solving, Excellence in (Lean) Manufacturing, and Six Sigma (Green Belt level) technology. Emphases is placed on variation reduction, elimination of waste, and root cause analysis. Prerequisite: none.

B. COURSE EFFECTIVE DATES: 08/22/2011 - Present

C. OUTLINE OF MAJOR CONTENT AREAS
   1. Describe the problem of solving tools.
   2. Determine root cause analysis concepts.
   3. Explain control charts and control limits.
   4. Recognize 7 types of waste.
   5. Explain the 5S visual management.
   6. Describe quick change over.
   7. Define one piece flow "pull" systems.
   8. Determine process capability.
   9. Determine a practical application of Six Sigma.

D. LEARNING OUTCOMES (General)
   1. The learner will gain an understanding of the implementation of problem solving tools. The learner will participate in both group and individual root cause analysis concepts. The learner will be using various types of sampling, charts, and distribution methods to set up various control charts.
   2. The learner will gain an understanding of manufacturing excellence principles. This will include lean technology with an emphasis on the 7 types of waste and the need for root cause analysis.
   3. The learner will gain an understanding of the Six Sigma benefits. This will be a basic introduction to Six Sigma level of quality and the beginning of the define, measure, analyze, Improve, and control phases of the DMAIC model.

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

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted