COMMON COURSE OUTLINE: Course discipline/number/title: WELD 1004: GMAW-Gas Metal Arc Welding (MIG Wire Feed Basic)

A. CATALOG DESCRIPTION
   1. Credits: 3
   2. Hours/Week: 6 hours lab
   3. Prerequisites (Course discipline/number): MATH 1015 or test into MATH 0098
   4. Co-requisites (Course discipline/number): WELD 1001, WELD 1002, WELD 1003, WELD 1005, WELD 1006
   5. MnTC Goals (if any): NA

   In this course the students will learn to power up machines, setup machines and perform various welds in different positions. The student will learn the names and purposes of various parts of the machine, setup, adjustment and their repair. Student will demonstrate different settings for electrode and thickness of material (including various types of metal). Starting, stopping and correctly continuing a weld; welding pipe and square tubing, stopping halfway or non-stop. Students will know the three different types of GMAW transfer (short circuit, globular and spray transfer) and the appropriate gasses. Students will learn the difference between acceptable or unacceptable welds under various conditions. Students will learn to shut off machine and proper storage of materials.

B. DATE LAST REVISED (Month, year): December, 2012

C. OUTLINE OF MAJOR CONTENT AREAS:
   1. GMAW-Gas Metal Arc Welding
   2. Machine set up
   3. Welding various metals
   4. Safety
   5. Quality Assurance

D. LEARNING OUTCOMES (GENERAL): The student will be able to:
   1. Demonstrate proper start-up, set-up, adjustment and shutdown of equipment.
   2. Demonstrate and identify different parts of welding equipment and repair.
   3. Identify and demonstrate different types of welding wire and usage.
   4. Demonstrate proper stringer bead, lap joint, butt weld and fillet weld in the horizontal, vertical and overhead positions.
   5. Demonstrate safe practices when working with compressed gases including usage and storage and proper use of equipment.
   6. Demonstrate proper use of safety procedures, PPE and appropriate apparel.
   7. Demonstrate safe practices (PPE-Personal Protection Equipment) around compressed gasses and their storage.

E. LEARNING OUTCOMES (MNTC): NA

F. METHODS FOR EVALUATION OF STUDENT LEARNING:
   1. Daily Lab Assignments
   2. Midterm Exam
   3. Final Exam

G. RCTC CORE OUTCOME(S) ADDRESSED:
   - Communication
   - Critical Thinking
   - Global Awareness/Diversity
   - Civic Responsibility
   - Personal/Professional Accountability
   - Aesthetic Response

H. SPECIAL INFORMATION (if any): None