COMMON COURSE OUTLINE: Course discipline/number/title: CAD 1220: Engineering Drafting

A. CATALOG DESCRIPTION
   1. Credits: 3
   2. Hours/Week: 1 hour lecture, 4 hours lab
   3. Prerequisites (Course discipline/number): None
   4. Co-requisites (Course discipline/number): CAD 1039, CAD 1200, CAD 1221
   5. MnTC Goals (if any): NA

   This course is a basic class in engineering drafting which is designed to provide working knowledge of the industry’s graphic language and detailed drawing using solid work. Geometric construction, projections drawing theory, the multiview system, auxiliary and section views, and projections will be covered. This course will be taught in a state-of-the-art facility featuring the latest release of SolidWorks.

B. DATE LAST REVISED (Month, year): April 2013

C. OUTLINE OF MAJOR CONTENT AREAS:
   1. History and Equipment of Engineering Drafting
   2. Introduction to Graphic Language
   3. Geometric construction
   4. Shape Description and Technical Sketching
   5. Orthographic Projection and Multiview System
   6. Cutting Planes and Sectional Views
   7. Reproduction and Control of Drawings
   8. Screw Threads, springs and Common Fasteners

D. LEARNING OUTCOMES (GENERAL): The student will be able to:
   1. Demonstrate how to read and measure drawings and scales.
   2. Determine the proper paper size.
   3. Understand basic shapes and their construction.
   4. Understand the concepts of projection, multiview systems and sectional views.
   5. Understand basic drawing reproduction and the importance of controlling the drawing.
   6. Define drafting terms.
   7. Demonstrate third angle projection.
   8. Create orthographic drawings using CAD.
   9. Dimension manufactured parts using CAD.
   10. Produce complete section views in CAD.
   11. Demonstrate a basic understanding of screw threads and common fasteners.
   12. Identify and draw various fasteners and springs.

E. LEARNING OUTCOMES (MNTC): NA

F. METHODS FOR EVALUATION OF STUDENT LEARNING:
   1. Projects
   2. Examinations
   3. Assignments

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

H. SPECIAL INFORMATION (if any):
   Tuition differential