

Course discipline/number/title: CAD 1221: Technical Drafting

A. CATALOG DESCRIPTION

1. Credits: 3
2. Hours/Week: 1 lecture, 4 lab
3. Prerequisites (Course discipline/number): None
4. MnTC Goals (if any): NA

This course introduces several topics in technical drafting including the use of freehand and electronic sketches along with the creation of detailed drawings in CADs. Projection drawing theory, the multi-view system, auxiliary views, and drawing revision processes will be covered. The concept of reverse engineering is explored and involves learning the proper use of a caliper. This course will be taught in a state-of-the-art facility featuring the latest release of SolidWorks.

B. DATE LAST REVISED (Month, year): October, 2017

C. OUTLINE OF MAJOR CONTENT AREAS:

1. Create Technical Sketches and Detailed Drawings
  - a) Freehand and other forms of sketching
2. Orthographic Projection and Multiview Drawing
  - a) Orthographic views
  - b) Visualization techniques
  - c) Drafting rules
3. Basic Working Theory of Detailed Technical Drawings
4. Auxiliary views
5. Drawing Revisions
6. Reverse engineering
7. Using a standard caliper
8. Using CAD with a team project

D. LEARNING OUTCOMES (GENERAL): The student will be able to:

1. Create Technical Sketches and Detailed Drawings.
2. Demonstrate freehand and other forms of sketching.
3. Draw orthographic projection and multi-view drawings.
4. Create orthographic views.
5. Use visualization techniques.
6. Follow drafting rules.
7. Interpret basic working theory of detailed technical drawings.
8. Generate auxiliary views.
9. Create drawing revisions.
10. Demonstrate reverse engineering.
11. Utilize a standard caliper.
12. Use CAD within a team project.

E. LEARNING OUTCOMES (MNTC): NA

F. METHODS FOR EVALUATION OF STUDENT LEARNING:

Methods may include but not limited to:

1. Evaluation of electronic files
2. Skill proficiency exercises
3. Quizzes
4. Exams

G. RCTC CORE OUTCOME(S) ADDRESSED:

Personal and Professional Accountability. Students will take responsibility as active learners for achieving their educational and personal goals.

H. SPECIAL INFORMATION (if any): None