

ENGR 105 Articulation Competencies

Computer-Aided Design (5 Credits)

This course provides familiarization with computer-aided drafting techniques using an interactive microcomputer CAD system. Students create, edit and store basic drawings using a tablet digitizer and/or screen menu consisting of geometric forms and alphanumeric characters. Laboratory included.

Upon completion of this course, successful students will score 80% or better on the following competencies to receive WVC college credits.

Student Learning Outcomes:

CATEGORIES			
1. Problem Solving: A. Critical Thinking B. Creative Thinking C. Quantitative Reasoning D. Qualitative Reasoning	2. Communication: A. Oral Expression B. Written Expression C. Artistic Expression	3. Social Interaction: A. Collaboration B. Ethical Conduct C. Professional Conduct D. Cultural Diversity	4. Inquiry: A. Information Literacy B. Research C. Documentation

Course Competencies Checklist:

- Proficiently use a CAD work station including storage and retrieval of CAD documents. (1C, 4C)
- Input data from a keyboard to generate working drawings. (1C)
- Use CAD commands to manipulate and edit existing drawings. (1C)
- Output hard copies of CAD-generated drawings to a plotter and printer. (1C)
- Understand basic engineering principles and depict them in CAD software. (1A,C, 4C)

Program Outcomes:

- Drafters generate technical drawings and three-dimensional models for architectural, civil, electrical, or mechanical fields. WVC's Drafting Certificate program teaches students the basic operation of a variety of industry standard software to supplement their chosen specialty. Students pursuing employment in industrial fields such as machining or electronics can apply their drafting skills to their trade just as students pursuing their transfer degrees would be able to apply their drafting knowledge to engineering or architecture fields.
- Students who complete the drafting certificate will demonstrate an understanding of engineering graphic principles and will be able to generate two-dimensional technical drawings as well as 3D models of parts and assemblies.

Course Topics:

- Auto-CAD Features in a Windows Operating System.
- Drawing Set-up and Template Files.
- Drawing Lines.
- Using Layers.
- Printing/Plotting.
- Drawing Basic Shapes.
- Editing Commands and Object Snap.
- Multi-view Drawings.
- Inquiry Commands.
- Text and Text Editing.
- Polylines.
- Dimensioning.
- Hatch and Block Commands.
- Isometric Drawing.
- Introduction to 3-D Drawing.