Print Date: 3/27/19

Course Objectives/Course Outline
Spokane Community College

Course Title: Engineering Graphics/CAD I
Prefix and Course Number: CAD 114

Course Learning Outcomes:

By the end of this course, a student should:

- Use common drafting tools to create and edit lines, geometry, and text
- Demonstrate proper engineering lettering
- Apply the rules of graphic geometry to drafting techniques
- Demonstrate skills in taking notes, taking tests, setting personal / career goals, effective study habits, and using campus resources to be successful in college and industry
- Create the following sketches/drawings: orthographic, section views, auxiliary views, and pictorials in manual and CAD drafting
- Navigate and edit the basic AutoCAD drawing environment
- Become proficient at basic CAD drawing and editing commands
- Print and plot CAD drawings to various scales, printers, and plotters
- Produce 2D CAD drawings that meet mechanical, architectural, civil engineering, and metric standards

Course Outline:

I. Introduction to Manual Drafting
   A. History of drafting
   B. Media
   C. Drawing reproduction and storage
   D. Drawing arrangement and format
   E. Graphic geometry terminology & techniques

II. "Design for Success" – Student Success Skills
   A. Note taking
   B. Textbook data
   C. Test taking
   D. Goal setting / Career planning
   E. Health – Effects on studying
   F. Campus resources, maps, tutoring, disabilities services

III. Drafting Technique
   A. Drafting tools - manual drafting and CAD
   B. Geometric construction
   C. Scales and measuring systems

IV. Orthographic Projection
   A. Common views and applications
   B. Orthographic projection techniques
   C. First and third angle projection, techniques, and symbols
   D. View creation with proper line types and spacing
   E. Transfer methods for development of views

V. Drafting Formats and Techniques
   A. Pictorial drawing
   B. Section views and revolution
   C. Auxiliary and removed views

VI. CAD Drafting Software & Techniques (2D and 3D Solid Modeling)
   A. Software functions, environment and set up
   B. Basic skills of drafting using template, environment settings, coordinates, drafting assistance (snap, grids, ortho, etc.), and viewing/inquiry commands (zoom, pan properties, etc.).
   C. Create, save, and apply a template file with a title block, border, snap, grid, unit and layer settings
   D. Create and use multiple layers, colors, line-types, line widths
   E. Find distances, calculate area, locate points
   F. Set and use text styles, fonts, sizes
   G. Set and use hatching and gradients

H. Modifying a drawing