

Course Objectives/Course Outline

Spokane Community College

Course Title: Engineering Drawings

Prefix and Course Number: PMF 202

Course Learning Outcomes:

By the end of this course, a student should:

- Describe the basic components of an engineering drawing, including the title block, revision block, graphical portion, and notes
- Explain and interpret line types, lettering, and symbols on engineering drawings
- Practice identification and calculations of dimensions, tolerances, scales, and unit conversions
- Define and demonstrate reading pictorial, orthographic, auxiliary, and section views of parts and/or assemblies
- Design and calculate a flat pattern layout of a sheet-metal part from a drawing
- Design an engineering drawing for an original sheet metal part
- Explain and interpret assembly drawings and their components, including parts lists and fastener types
- Explain and interpret welding symbols, surface finish symbols, and other manufacturing process instructions on engineering drawings
- Create a multiview projection of a part
- Describe and interpret revision systems for engineering drawings; revise an engineering drawing
- Demonstrate professionalism, critical thinking, and teamwork during in-class discussions, presentations, and hands-on activities

Course Outline:

A. *NOTE:* This course schedule is subject to change at the discretion of the instructor.

- I. **Week**
 - A. Engineering Drawings Overview
 - B. Anatomy of a Print: Blocks and Zones
- II. **Week 2**
 - A. Lines and Lettering on Prints
 - B. Units, Scales, Conversions, and Geometry
- III. **Week 3**
 - A. Orthographic Views
 - B. Understanding Multiviews
- IV. **Week 4**
 - A. Sectional Views
 - B. Detail and Removed Views
 - C. Auxiliary Views
- V. **Week 5**
 - A. Dimensioning Lines and Symbols
 - B. Dimensioning Schemes
 - C. Calculating Tolerances
- VI. **Week**
 - A. Midterm Exam covers skills learned in Weeks 1- 5
- VII. **Week 7**

- A. GD & T Fundamentals
- B. Interpreting Feature Control Frames
- C. Calculating Geometric Tolerances

VIII. Week 8

- A. Sheet Metal Drawings Overview
- B. Flat Pattern Layout and Development
- C. Sheet Metal Design and Drafting
- D. Sheet Metal Design Project Day 1

IX. Week 9

- A. Welding Symbol Elements
- B. Interpreting Welding Symbols
- C. Sheet Metal Design Project Day 2

X. Week 10

- A. Working Drawings
- B. Assembly Drawing Types
- C. Revision Systems/Engineering Change Orders
- D. Sheet Metal Design Project Day 3

XI. Week 11

- A. Threaded Fasteners
- B. Rivets
- C. Surface Finish and Roughness
- D. Sheet Metal Design Project Day 4

XII. Week 12

- A. Final Exam covers skills learned throughout course
- B. Final Presentation – Sheet Metal Design Project