

**Course Objectives/Course Outline
Spokane Community College**

Course Title: Hydraulics/Pneumatics

Prefix and Course Number: CAD 139

Course Learning Outcomes:

By the end of this course, a student should be able to:

- understand uses for various hydraulic and pneumatic components
- identify hydraulic and pneumatic components
- use various hydraulic and pneumatic formulas
- design basic hydraulic and pneumatic circuits

Course Outline:

- I. Fluid Power Principles
 - A. History
 - B. Principles
 - C. Fluids
 - D. Leverage
 - E. Fluid Flow
- II. Components
 - A. Cylinders
 - B. Valves
 - C. Pumps
 - D. Other Components
- III. Design Considerations
 - A. Designing with Cylinders
 - B. Control Systems
 1. Directional Controls
 2. Pressure Controls
 3. Speed Controls
 - C. Circuits
 - D. Calculations and Formulas
- IV. Practical Applications