

Print Date: 11/15/17  
**Course Objectives/Course Outline**  
**Spokane Community College**

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**Course Title:** Gas or Line Construction  
**Prefix and Course Number:** UTIL 103

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**Course Learning Outcomes:**

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

- Interpret job prints and standards
- Practice safe utility construction methods
- Earn CDL License, Class A

**Course Outline:**

Gas Construction –

- I. Excavation Basics
  - a. Safety and Ergonomics
  - b. Hand Excavation
  - c. Trenching & Shoring
- II. Excavation Equipment
  - a. Operation
  - b. Hand signals
  - c. Damage Prevention
  - d. Excavation around utilities
  - e. Locating underground pipeline
- III. Fundamentals of Heating Gases
  - a. Natural, liquefied, propane, and synthetic gas
  - b. Compliance for the gas industry
  - c. Tools and materials
- IV. Polyethylene Gas Pipeline
  - a. Install gas mains
  - b. Install gas services
  - c. Gas meters and regulators, theory and installation
  - d. Gas appliance basics

Line Construction –

- I. Climbing Basics
  - a. Safety and PPE
  - b. WA State code – WAC 45
  - c. Climbing rules
- II. Poles
  - a. Test and treat
  - b. Cross arms
  - c. Heavy arms
  - d. Double arms
  - e. Cutting gains
- III. Underground Construction Basics
  - a. Tools
  - b. Equipment

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c. Materials

IV. Electricity Principles

a. AC/DC theory

b. Ohm's law

c. Series/parallel circuits

d. Combination circuits

- V. Flagger Certification
  - A. Traffic Control
  - B. Hand Signals
- VI. Practical Applications/Gas Safety
  - A. Backhoe Operation
  - B. Installing Gas Lines
  - C. Excavation and Shoring
  - D. Soil Classification and Identification
  - E. Introduction to Firefighting Techniques