

SOUTHEAST COMMUNITY COLLEGE
CONSTRUCTION MANUFACTURING AND TECHNOLOGY DIVISION
Plumbing Technology Program
Revision Date: August 21, 2023

I. CATALOG DESCRIPTION

Course Number: PLMB1120
Course Title: Fuel Gas System Concepts & Practices
Prerequisite(s): "C" or higher in PLMB1010
Catalog Description: A review of fuel gas safety precautions, potential hazards, applications, system installation and testing with reference to the Lincoln Gas Code and Standard 54 and Standard 58 of the NFPA.
Credit Hours: 2
Class Hours: 30
Lab Hours: 0
Total Contact Hours: 30

II. COURSE OBJECTIVES: *Course will:*

- A. Explain the different types of pipe used to transfer fuel gas.
- B. Demonstrate proper pipe sizing and installations according to the Fuel Gas Codes and manufacture's specs.
- C. Illustrate proper hanger requirements for each type of pipe per code.
- D. Demonstrate the techniques to obtain a Tracpipe PS-II Certification.
- E. Explain the bonding requirements of fuel gas piping.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES:

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Identify the pipe material best suited for the installation.
 - 2. Construct and size a gas piping system to supply all appliances properly.
 - 3. Demonstrate proper hanger spacing for the pipe material used.
 - 4. Perform installations using Tracpipe PS-II after being certified.
 - 5. Demonstrate proper bonding techniques to help eliminate ignition of the gas.
 - 6. Demonstrate safe and quality workmanship.
- B. General Education Learning Outcomes (GELOs)
 - 1. GELO #3: Critical Thinking & Problem Solving
Outcome 1: Collect, identify, interpret and analyze data.

IV. CONTENT/TOPICAL OUTLINE

- A. Understanding the different types of gas pipe.
- B. Choosing the best pipe for the installation.
- C. Learn how to properly size the pipe for the installation.
- D. Support the pipe with properly spaced hangers per code.
- E. Certification training for installing Tracpipe PS-II.
- F. Learn how to thread black iron pipe.
- G. Perform quality and safe installations.
- H. Test the system for leaks.

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s):

1. Online UPC 2012 Book
2. Lincoln Gas Code Book
- B. Other Resources: Handouts, PowerPoints, Pipe Sizing Diagrams, Manufacture Rep
- C. Supplies: computer access

VI. METHODS OF PRESENTATION/INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 1. Lectures, PowerPoints, Pipe Sizing Diagrams, online materials
 2. Lab project assignments

VII. METHODS OF EVALUATION

- A. Methods of evaluation, although determined by the individual instructor, traditionally includes a combination of the following:
 1. Quizzes
 2. Tests
 3. Lab Assignments and Assessments