Compressed Gas Piping for Research Operations

A one-day course offering for graduate students in UW-Madison’s College of Engineering

Description: This course will cover many aspects of using compressed gases safely in research labs. From common problems with manifolds, pipe supports, and connections to transferring gases and selecting/installing appropriate tubing. If you are responsible for making compressed gas connections and runs in your lab, this one-day course will help you become safer and more knowledgeable about using compressed gases.

Dates: January 5 & 6, 2022

Location: In-person @ Engineering Hall Room 1610

Cost: $0 and includes lunch
Sponsored by the College of Engineering Office of Safety, with major funding support provided by the College of Engineering Department of Interdisciplinary Professional Programs

Limited to 35 in-person attendees each day

Register for Wednesday, January 5, 2022 @

Register for Thursday, January 6, 2022 @

Instructors:

Richard P. Palluzi, PE, CSP, of Richard P. Palluzi LLC is a consultant to the pilot plant and laboratory research community on safety, design, and research project management. He retired as a Distinguished Engineering Associate after almost 40 years at ExxonMobil Research and Engineering, where he was involved in the design, construction, and support of pilot plants and laboratories for ExxonMobil’s research site in Clinton, New Jersey, as well as affiliates worldwide. Rich is the author of two books, and numerous articles and presentations as well as a past chair of the American Institute of Chemical Engineers Pilot Plant Committee, ExxonMobil’s Pilot Plant and Laboratory Safety Standards Committee, and ExxonMobil’s Safe Operations Team for their Clinton facility. Rich is on the National Fire Protection Association (NFPA) NFPA-45 Fire Protection for Laboratories Using Chemicals and NFPA-55 Industrial and Medical Gasses committees. He has BE and ME degrees in chemical engineering from Stevens Institute of Technology.

Elaine M. Andrysick joined Interdisciplinary Professional Programs, University of Wisconsin-Madison, as a continuing engineering education specialist in 1988. She is responsible for the development and delivery of high-value continuing engineering education short courses for practicing professionals in the areas of chemical and process engineering and laser material processing. She also manages the University’s Laser Welding Certificate program.
Outline
Compressed gas definitions
Compressed gas cylinder information
How many compressed gas cylinders can you have in a laboratory?
Separation of compressed gases
Ventilation - the key to safety
Common Problems
- Impingement
- Securing
- Temperature limitations and heating
- Protection from hazards
- Leaking Cylinders
- Purging piping
How to use compressed gas cylinders safely
30-minute Lunch
How to pipe gases safely
- Materials of construction
- Piping connections
- Sealants
- Pipe runs and supports
- Tubing pressure and temperature rating
- Tubing: how to select, install, and use it
- Tubing Demonstration
- Hoses and plastic tubing
- Hydrostatic and Leak testing
Recommended piping
Putting it all together