



Process Engineering Fundamentals for Facilities Engineers - G4 Short Course - Instructor-led + eLearning

COURSE

About the Course

This short course is from the industry-standard Gas Conditioning and Process course (G-4), known globally as the Campbell Gas Course. The course includes:

- 3 hours e-Learning modules
- 2.5 hours virtual, instructor-led sessions (pre-recorded)

[See example online learning module](#)

[Click here to see the full G-4 Short Course listing](#)

This is part 1 of the 2 courses that will set the foundation for a successful facilities engineering career. John M. Campbell often said "knowledge of the basic fundamentals is the required foundation for a successful professional practice."

This short course will set the initial foundation in facilities engineering by covering the initial basic concepts required to deeply understand gas processing, and be able to "look inside the pipe." Course topics include:

- Hydrocarbon component families
- Basic conversions used in the gas processing industry
- Gas and liquid physical properties
- Challenges with hydrocarbon analysis and C6+ characterization

With this knowledge, you will better understand your facilities inlet stream compositions and the specific challenges that the composition may present. In addition, the necessary conversions required to do any gas processing or equipment calculation will come quickly and easily to you. This is the first part of the training to allow you to quickly troubleshoot plant operations based upon understanding how hydrocarbon gas and liquid physical properties change based upon the current or forecasted operating conditions.

[See example online learning module](#)

"I really enjoyed this course. The material was well presented, it was in depth, but not overly so. I liked the problem sets. But best of all, the instructor did a great job. She challenged the students to answer questions and kept the session very engaging. I hope to take another class with her in the future." - L48 Graduate Engineer, United States

"I felt that the instructor did a good job fully covering all the material that was discussed in the videos, but in a

condensed and easy to understand format. There was a lot of application in the lecture that I know I will use in my role both now and in the future." - Graduate Engineer, United States

"This course 'joined a lot of dots' for me, and I gained a better understanding of my facility from it." - Operations Technician, Australia

Target Audience

Production and processing personnel involved with natural gas and associated liquids, to acquaint or reacquaint themselves with gas conditioning and processing unit operations. This course is for facilities engineers, process engineers, senior operations personnel, field supervisors, and engineers who select, design, install, evaluate, or operate gas processing plants and related facilities.

You Will Learn

Participants will learn how to:

- Describe the concept of atomic mass, molecular mass, and the mol
- Identify the four main hydrocarbon groups
- Practice the concept of relative density of a gas
- Practice the concept of relative density of a liquid
- Describe why physical properties are important
- Describe an Equation of State, its purpose and uses
- Define standard (normal) conditions for SI and FPS units, and calculate the molar volume at these conditions
- Describe the gas compressibility factor, and use it to calculate gas density
- Define the property "viscosity", list applications where it is used, and describe correlations that can be used to predict its value
- Discuss the difference between an extended analysis and a standard gas chromatographic analysis
- Recognize the uncertainties involved with characterizing the C6+ components in a natural gas, condensate or crude oil stream, and describe the relationship of these factors with hydrocarbon liquid composition

Course Content

- Hydrocarbon component families
- Basic conversions used in the gas processing industry
- Gas and liquid physical properties
- Hydrocarbon analysis and C6+ characterization

Product Details

Categories: [Midstream](#)

Disciplines: [Gas Processing](#) [Process Facilities](#)

Levels: [Basic](#)

Product Type: [Course](#)

Formats Available: [On-Demand](#)

Instructors: [Gerard Hageman](#) [Mahmood Moshfeghian](#) [Kindra Snow-McGregor](#)

On-Demand Format

| Course | On-Demand (Available Immediately)

\$495.00
