



## Transportation of Crude Oil Fundamentals

### MODULE

#### About the Skill Module

This skill module reviews transportation of crude oil utilizing hydraulic grade line (HGL), and the key issues associated with the pumping systems. Also, the operating principles of centrifugal pumps including NPSH requirements and how to determine the temperature profile along a pipeline will be described.

This skill module covers the following topics:

- Overview of Crude Oil Transportation Options
- Centrifugal Pumps
- Pipeline Pump Stations
- Pipeline Pumps

#### Target Audience

Process/facilities engineers and senior operating personnel involved with the design and operation of oil and produced water processing facilities.

#### You Will Learn

Participants will learn how to:

- Identify the most common oil transportation methods
- Describe the typical tanker size classes used for crude oil transport
- Discuss the applications and pros/cons of rail transport of crude oil
- Explain Bernoulli's equation, including how to estimate and apply the friction factor
- Perform pipeline/piping friction loss calculations
- Construct the Hydraulic Grade Line for an oil pipeline application, including location of the pump stations, pump type selection, and pumping power estimation
- Explain economic pipe diameter and describe typical velocity and pressure drop guidelines for sizing piping systems
- Describe the basic layout of a pipeline pump station
- Describe the operating principles of centrifugal pumps, including NPSH requirements
- Outline the commonly used plant and pipeline piping grades
- List codes and standards applicable to oil pipeline and plant piping applications
- Perform wall thickness calculations for pipeline and plant piping applications

## **Product Details**

Categories: Midstream

Disciplines: Process Facilities

Levels: Foundation

Product Type: Individual Skill Module

Format: On-Demand

Duration: 2 hours (approx.)

**\$795.00**