

Draft

Time	Day 1 - Pipeline Design and Commissioning	Day 2 - Assessments Methods	Day 3 - Failure Analysis and Exam
8:00 AM	Breakfast		
8:30 AM	Introduction	Day 1 Workgroup Presentations	Day 2 Workgroup Presentations
9:00 AM	Pipeline Design - Canada (CSA Z662) & USA (ASME B31.4 & B31.8) (Paulson)		
9:30 AM	Routeing (Murray)	Key Industry Failures and Lessons Learned (Hopkins)	Failure Analysis - Basics and Examples (Hopkins and Murray)
10:00 AM		Integrity Assessment Methods (Vieth)	
10:30 AM			
11:00 AM			
11:30 AM			
12:00 PM	Lunch		
12:30 PM			
1:00 PM	Stress Design of Pipelines (Murray)	Defect Assessment Methods (Hopkins)	Exam Prep
1:30 PM	Pipeline Construction (Paviglianti)		
2:00 PM			Exam
2:30 PM			
3:00 PM		Hazard (Threat) Mitigation and Remediation (Paulson)	Coffee Breaks would be at 10:30 am and 2:45 pm daily
3:30 PM			
4:00 PM	Pressure Test Design and Procedures (Vieth)		
4:30 PM			
5:00 PM			
5:30 PM		Workgroup Evening Assignment #2 (Threat Identification, assessment and Remediation) (Vieth)	
6:00 PM	Workgroup Evening Assignment #1 (New Construction Design) (Paulson)		
6:30 PM			
7:00 PM			
7:30 PM			
8:00 PM			

Assignment #1: Design a new pipeline to connect two facilities with a given design pressure, flow rate and product type. This should also include a design of precommissioning integrity checks and tests.

Assignment #2: Design a program to assess a pipeline for a specific threat and determine how to mitigate and remediate the threat.

Introduction - Introduce the instructors and a high-level overview of the course contents.

Pipe Design - Review of industry standards for proper design to assure the integrity of the pipeline during operation.

Pipeline Routeing - Overview of key elements of routeing an onshore pipeline

Pipeline Stress Design - Identification of methods for determining the allowable stress in a pipeline as well as how defects may affect the allowable stress.

Pipeline Construction - Review of construction related issues that focus on maintaining the long term integrity of the pipeline.

Pressure Test Design and Procedure - Design and test procedure considerations for pipeline pressure tests for both new construction and existing operating pressure certification.

Key Industry Failures and Lessons Learned - Review historical industry failures where the cause was integrity related. Document what led to the failure as well as what can be done to prevent a similar future incident.

Integrity Assessment Methods - Outline techniques for assessing the integrity of a pipeline, including in-line inspection, direct assessment, indirect assessment and other techniques.

Defect Assessment Methods - Overview of in the methods for assessing and repairing features discovered on the pipeline.

Hazard (Threat) Mitigation and Remediation - Define the process for removing and correcting issues that are identified to have caused a threat to the pipeline.

Failure Analysis, Basics and Examples - Teach the process of how to preserve evidence at the site of an incident and how to transport the evidence to the lab for investigation. Techniques of analysis in the lab to determine the cause of failure will also be covered.