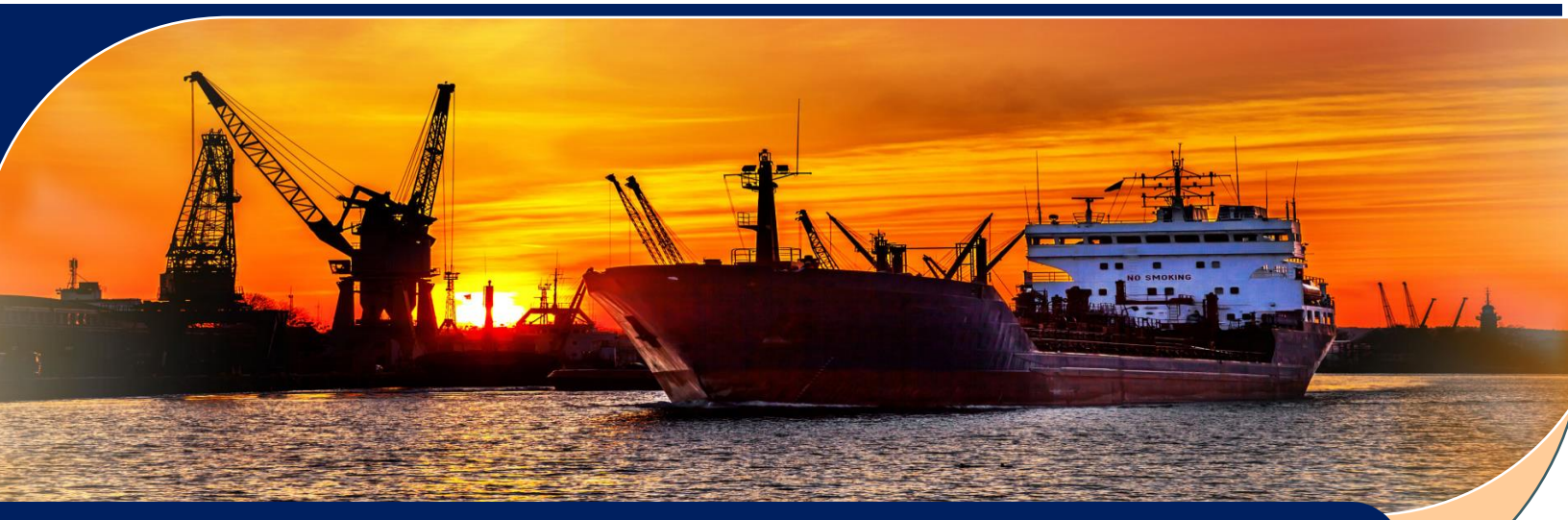


Best Technology Solutions (BTS)

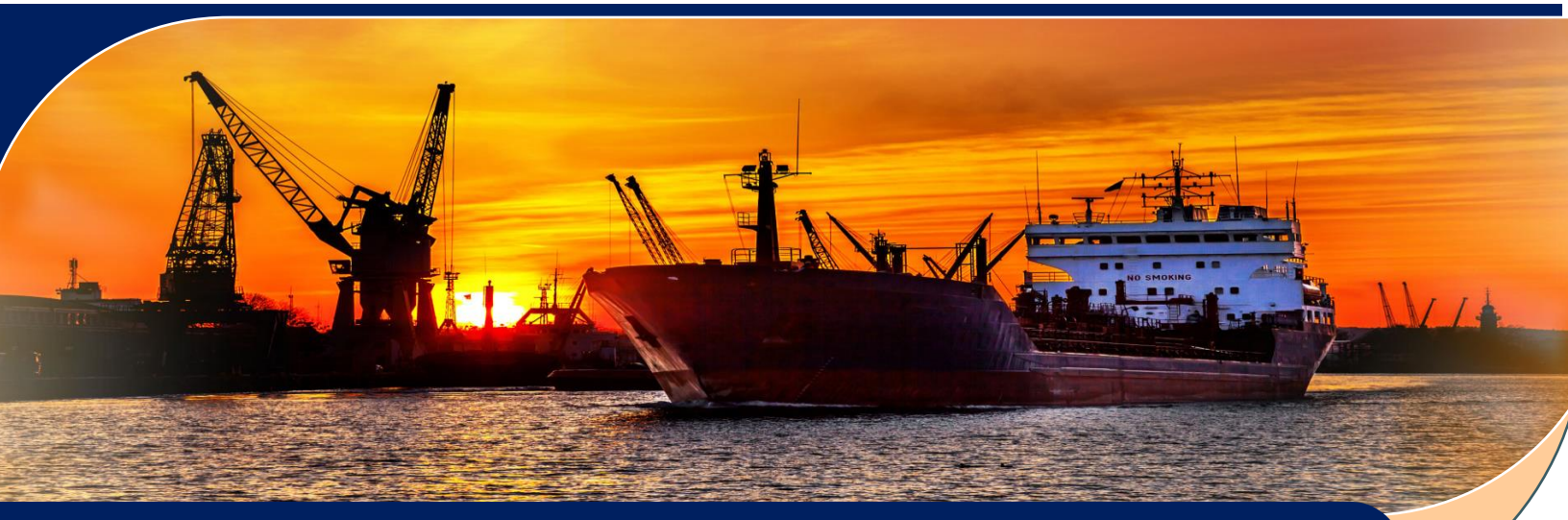
Fundamentals of Onshore & Offshore Pipeline Systems Training program

Introduction:

This intensive foundation level course covers the design, construction, and operation of pipeline systems. The focus is on pipeline routing, hydraulics, mechanical design, and construction for both onshore and offshore pipelines. The result of this course is cost-effective, safe and environmentally sound design, construction, inspection, operation, and maintenance of pipelines. Design problems and group projects are an integral part of this course. The course will provide a complete and up-to-date overview of the area of pipeline engineering taking the candidates through the pre-design phase, design, construction, installation, operation and maintenance

Who should attend?

Technical professionals who are new to the pipeline business or need a broad understanding of the pipeline business including: pipeline project managers, pipeline engineers, facilities engineers, pipeline design and construction engineers, engineering and construction contractors



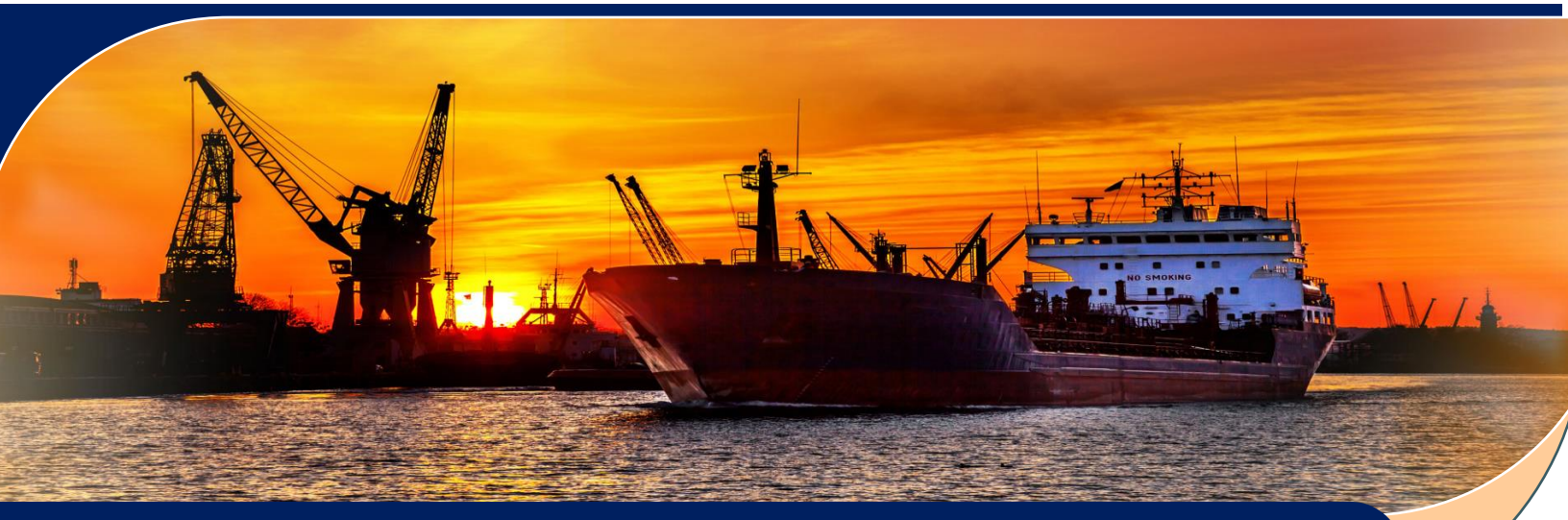
Course Objectives:

By the end of this course delegates will be able to:

- Apply mechanical and physical principles to all phases of pipeline design, construction, and operation
- Identify similarities and differences of onshore and offshore pipeline systems
- Incorporate construction methods, commissioning, pressure test, and start up into the design of a pipeline system
- Adhere to safety and environmental regulations for a sound design
- Apply common sense methods and technical requirements to define pipeline routes and facilities locations
- Know the importance of fluid properties and process to pipeline systems design and construction
- Have an understanding of the pipeline structural analysis and design
- Gain a practical understanding of pipeline materials and corrosion problems and protection

Course Outline:

- General introduction to offshore engineering
- Design overview : introduction to offshore pipeline construction
- Route selection



- Shore approaches
- Structural design of pipelines
- On-bottom pipeline stability
- Pipeline systems definition and applications
- Codes and standards related to pipelines
- Pipeline hydraulics
- Single phase gas and liquids
- Multiphase fluids and heavy waxy crudes
- Major design considerations for strength, stability, and installation
- Pipeline survey and mapping
- Pipeline route engineering
- Pipeline materials and components
- Corrosion and cathodic protection of pipelines
- Pipeline metallurgy
- Increasing corrosion resistance
- Corrosion and its prevention
- External corrosion protection with coatings
- Cathodic protection systems & design

- Special design aspects, covering such issues as risers, slug catchers, pigging facilities, etc.
- Basic design considerations for pipeline facilities
- Bundles & pipe-in-pipe
- Trenching and burial
- Spans
- Pipelaying
- Welding
- Insulation
- Pipeline construction for cross country and offshore systems focusing on welding
- Pressure testing, pre-commissioning and commissioning
- Pipeline integrity aspects including in-line inspection
- Leak detection and emergency planning considerations
- Repairs and modifications considerations
- Risk and pipeline design
- Development and application of pipeline codes
- Pipeline monitoring & inspection
- New technology in deep water developments
- Upheaval & lateral buckling
- Pipeline failures & repair
- Pre commissioning of new pipelines

- Safety, environmental and regulatory requirements

Accreditation:

BTS attendance certificate will be issued to all attendees completing a minimum of 80% of the total course duration.