



PIPENET - Fluid Flow and Surge Analysis Training (IGT-PN)

Course Length: 4 Days

This course is designed for almost anyone involved with piping in the petroleum, chemical, power, gas transmission, and related industries. Through our technical support we learn, every day, what engineers need to know, and we've tailored our seminar to give as much practical knowledge as we can in 2 days. The seminar covers proper system modelling guidelines, methods of fluid flow and surge analysis of piping systems, evaluation of system designs, and effective approaches to system redesign.

Prerequisites:

- Basic Plant design/ engineering knowledge is required.
- Reading P&ID knowledge is required.
- It is also recommended that you have a working knowledge of Microsoft® Windows® Operating systems

Curriculum

Day 1 - Standard Module

- ❖ Introduction to PIPENET and Modules
- ❖ Principles of User Interface
- ❖ User of different Components
 - Pipe
 - Valves
 - Nozzles
 - Pump
 - Orifice Plates
- ❖ Rules of Design Phase and Calculation Phase
- ❖ Input of Examples
 - Example 1 - Simple 3 pipe system
 - Example 2 - Cooling Water System
 - Review reports

Day 2 - Spary & Sprinkler Module

- ❖ Use of different components and creation of libraries
 - Pipes
 - Valves
 - Deluge valves
 - Nozzles
 - Overboard valves
 - Orifice plates
- ❖ Rules of PIPENET Design and calculation Phase
- ❖ Principles of schematic input
- ❖ Techniques for designing fire protection systems
- ❖ What to look for in the design of deluge systems
- ❖ What to look for in the design of firewater ringmains





- ❖ Fire water wet system, Dry system
- ❖ Description of a deluge system example

- ❖ Input of example
 - Example 1 – Detailed study of a deluge system
 - Example 2 – Detailed study of a firewater ring main

Day 3 - Transient Module

- ❖ Basic input and user interface
- ❖ Description and use of different components
- ❖ Graphical output
- ❖ Superimposing graphs
- ❖ Changing graph properties – line thickness, titles
- ❖ Legends and arrows in graphs
- ❖ Cut and paste tabular and graphical results into reports

Day 4 - Transient Module

- ❖ Transient Module - Tanker Loading System
 - Description of example
 - Base case with different valve closure times
 - Tabular output
 - Graphical output
 - Case with Accumulator
 - Case without accumulator
 - Case with surge relief valve

- ❖ Transient Module – Surge Analysis for Subsea Pipeline
 - Sources of pressure surge in subsea pipeline
 - Description of example
 - Input and solution of base case
 - Base case with different valve opening times
 - Base case with different valve closing times
 - Remedial measures especially for valve opening cases

- ❖ PIPENET with CAESAR II for Piping Design
 - Usage of PIPENET forces in CAESAR II
 - CAESAR II static analysis with PIPENET forces CAESAR II static analysis with PIPENET forces
 - CAESAR II dynamic analysis with import of PIPENET forces
 - Piping design for pressure surges
 - Pipe supports design for pressure surges

