Day 1  NozzlePRO Basics
- Basic Nozzle Analysis
  - Satisfying the Sec. VIII – Div. 2 Code
  - Volumetric Analysis
  - Steady State and Transient Heat Transfer in Nozzles
- Saddles and Pipe Shoes
  - Satisfying the Codes
  - Steady State and Transient Heat Transfer in Saddles and Pipe Shoes
- Basic Nonlinear Use (Introduction to Sec. VIII - Div. 2 Part 5 Elastic Plastic Analysis)
- Nonintegral Repads
- Introduction to the new Drawing Tools
- Introduction to basic Fitness for Service: Local Thin Areas and Crack-Like Flaws

Day 2  FEPipe Basics
- FEPipe Templates and Their Capabilities
- Multiple Nozzles and Supports
- Combining Models to Create Larger Systems
- Skirts and Static/Dynamic Seismic Analysis
- Pressure Capacity and SIFs for B16.9 and EN10253 Welding Tees

Day 3  NozzlePRO / FEPipe Advanced Topics
- Establishing Noncyclic Service for Vessels & Piping Systems
- Simple Volumetric Rules of Thumb
- Nonlinear Analysis Introduction
- Section VIII Div. 2 – Specific examples for pressure vessels and piping
- New Drawing Tools – Intermediate and Advanced Capability

Day 4  New Functionality
- Nonlinear Elastic-Plastic Analysis of Flange Joints
- Local Thin Area and Crack Analysis | Fitness for Service
  - Knowing when to inspect for cracks
  - Crack Prediction – how to use the FFS and Inspection Guidance
  - Crack Growth Model and Inspections
  - FFS & Linear Analysis | FFS & Nonlinear Analysis
  - J Integrals

Day 5  New Functionality
- Point Cloud Examples
  - Establish a baseline for an installed piping system
  - Understand accuracy calibration by the laser scanner
  - Evaluating operating piping systems – what to expect
  - Verifying vessels and nozzle placement
- BOS B31 – basic fluid mechanics and common variables for:
  - Slug Flow
  - Waterhammer
  - Relief Valve Firing
  - Two Phase Flow
- Cumulative Damage and Code Compliance (PCL-Gold and CAESAR II)
- Piping Fitness for Service
- When is it critical to use B31J?
- When should a piping system be inspected?
- Piping System Gap Analysis for Flanges

Note: Items may change, be moved to different days, or skipped based on course progress and software.
REGISTRATION FORM

Module | Course | Days/Dates
--- | --- | ---
Module 1 | NozzlePRO Basics | Monday.........................April 29, 2019
Module 2 | Module 1 (+) FEPipe Basics | Monday - Wednesday ..................April 29 – May 1, 2019
| NozzlePRO/FEPipe Advanced | |
Module 3 | Module 2 (+) Two Days of New Functionality | Monday - Friday .....................April 29 – May 3, 2019

Price | M | T | W | Th | F
--- | --- | --- | --- | --- | ---
Module 1: NozzlePRO Basics | $900 | \* |
Module 2: Above (+) FEPipe Basics | $2,700 | \* | \* | \* |
| NozzlePRO/FEPipe Advanced | |
Module 3: Above (+) Two Days of New Functionality | $3,500 | \* | \* | \* | \* | \* |

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