

## Course Summary

### Monday, May 1 - Day 1 (NozzlePRO™ focus)

- Introduction to Finite Element Types
- Introduction to ASME VIII Division 2 Code Stresses
- NozzlePRO Program Overview
- Working with Shell Elements
- Introduction to Brick Elements
- Determining Nozzle Allowable Loads, Stiffnesses and SIFs
- Fatigue Analysis using NozzlePRO

### Tuesday, May 2 - Day 2 (FEPipe™ focus)

- General FEA Introduction
- Introduction to all PRG Software Programs
- FEPipe™ Templates and Their Capabilities
- ASME Section VIII - Division 2 Part 5 Code Overview
- Nozzle Flexibilities, Allowable Loads – FEPipe™ specific
- Piping System Stress Analysis Capabilities in FEPipe™

### Wednesday, May 3 - Day 3

- Introduction to the FEPipe™ String Template
- Database Operations in FEPipe™
- Modeling Plate Structures and Attachments, line and surface loads
- Axi-Symmetric Brick Models, AxiPRO™
- Addressing Heat Transfer Problems
- Introduction to Fatigue Analysis

### Thursday, May 4 - Day 4

- Custom Modifications in modgen
- Stress Linearization
- Stability Analysis
- Dynamic Response Analysis
- Half day of flexible content (Tony Paulin)

### Friday, May 5 - Day 5 – **NEW!** FEATools v3 (& Caesar II) - Focus on B31.3 Cyclic Service & ASME B31J

- Severe Cyclic and 2016 Version of B31.3 (F301.10.3)
  - How B31J affects this prediction
- High D/T Piping and B31J
- Using LWN fittings for small bore branches
- Can I use WRC 297 for Nozzles in Cones?
- Hillside nozzles and CAESAR II pipe stress calcs
- Evaluating supports on bends in CAESAR II
  - Building accurate models, and applying SIFs to the bend and the trunion
- Evaluating structural steel supports on bends
  - What section modulus should be used for stress
- Verifying allowable loads on pipe shoes in hot pipe
- Piping Allowable Vessel Loads vs. Sec. VIII –div. 2 Allowable Vessel Loads
- What type of results to expect from FEA analysis of 661 header box
- Using CAESAR II when Press. cycles equal or exceed Temp. cycles
- How refractory can affect CAESAR II Results
- Long Saddles for Vessel Flexibility using FEAToolsV3
- Comparing Models with Changes and Comparisons with Filters

**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™	Monday	May 1, 2017 (1 day)
MODULE 2:	FEPipe™	Tues.-Thurs.	May 2-4, 2017 (3 days)
MODULE 3:	FEATools™ v3 (Cyclic Service & B31J)	Friday	May 5, 2017 (1 day)

<b>Seminar Location:</b>	<b>PRG Training Room</b> 11221 Richmond Ave. Suite C-103 Houston, TX 77082 281-920-9775
<b>Recommended Hotel:</b>	Holiday Inn Westchase 10609 Westpark Dr. Houston, TX 77042 713-532-5400

A rental car is recommended, however the hotel will provide van service to our offices if pre-arranged with the hotel upon check-in.

<u>Course Module and Cost Options</u>		<u>Price</u>	<u>M</u>	<u>T</u>	<u>W</u>	<u>Th</u>	<u>F</u>
<input type="checkbox"/>	<b>New FULL Seminar – ALL 3 MODULES:</b>	\$ 3,500	•	•	•	•	•
<input type="checkbox"/>	<b>Classic Seminar – MODULES 1&amp;2:</b>	\$ 2,800	•	•	•	•	
<input type="checkbox"/>	<b>NozzlePRO™ focus – MODULE 1 ONLY:</b>	\$ 900	•				
<input type="checkbox"/>	<b>FEPipe™ focus – MODULE 2 ONLY:</b>	\$ 2,400		•	•	•	
<input type="checkbox"/>	<b>FEATools™ v3 – MODULE 3 ONLY:</b>	\$ 900					•
<input type="checkbox"/>	<b>FEPipe™ &amp; FEATools™ v3 – MODULES 2,3:</b>	\$ 2,800	•	•	•	•	

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**Cancellation Policy:** Paulin Research Group ("PRG") will provide a full refund for cancellations made at least two weeks prior to the seminar. A 50% refund will be given for any cancellations made after that date. PRG reserves the right to cancel this seminar up to three weeks prior to the starting date. PRG cannot be held responsible for any loss on travel arrangements due to such cancellation.