BECHT TECHNICAL TRAINING

Course Content

Title: Refinery Economics and Fundamental Aspen PIMS

Potential PDH: 40   **Code:** BTT058

Description:

Upon completion of this course, participants will be able to use fundamental economic thinking and concepts to support business profitability and success. They will:

- Develop a baseline understanding of economic fundamentals
- Connect those fundamentals to petroleum refining and the broader market
- Understand how to connect these concepts with business success
- Learn LP fundamentals
- Gain familiarity with key Aspen PIMS tables and formats
- Develop simple Aspen PIMS model and understand how the matrix structures are generated
- Execute and troubleshoot various case scenarios and analyze informatio from
   Aspen PIMS reports
- Perform basic economic evaluations

Outline:

Overview of a Petroleum Refinery

Economic Bases:
- Crude/Feedstock/Product Pricing
- Other Economic Basis Considerations: ESG, Regulatory, Logistics and Risk Management

Economic Optimization:
- Crude Units
- Process Units
- Product Blending
- Refinery

Economic Decision Making
- Models and Tools
- Operations Planning
- Crude Oil Evaluation
- Refinery Investments

Fundamental LP Concepts
- What Is An LP?
- How Does It Work?
- LP Terminology
- LP Economic Concepts
- Pooling and Process Unit Representations

Fundamental LP Economics Applications
- Assay Management

- Crude Oil Evaluation
- Scenario Evaluation For Operations & Investment
- Fundamental PIMS

PIMS Data Tables and Format
- Supply and Demand Tables
- Case Stacking
- Product Blending
- Process Submodels
- Base-Delta Submodels
- Pooling Submodels
- Parameter Rows
- Crude Distillation
- Miscellaneous tables
- Row and Column names in the PIMS Matrix
- How to Troubleshoot Models
- Common Mistakes
- Additional Features

Instructor:

Darren York has 25 years of Supply Chain Optimization and Industrial Engineering experience in the Refining and Chemical industry. Darren's experience includes roles with KBC Advanced Technologies as a Principal Consultant and Global Product Manager for Strategic and Supply Chain Services working with international clients in all regions including the US, Canada, Mexico, Ecuador, Brazil, Uruguay, Germany, France, Italy, Greece, Russia, EAU, Oman, South Africa, India, Thailand, Malaysia, Philippines, China and Japan. Prior to KBC, Darren held multiple positions, including management roles, at Flint Hills Resources Corpus Christi refinery in business development, economics and planning, production accounting, compliance and performance management. In these roles he has focused on business success and margin capture through applied optimization, project leadership, planning, coaching and technical development of an integrated hydrocarbon supply chain. Darren has expertise in refinery and petrochemicals planning (operations, annual, long term, and strategic), refinery scheduling, crude evaluation/selection, product blending, logistics, commercials/trading, economics and business analysis, LP modelling (PIMS, RPMS, GRTMPS, Petro and Spiral), Scheduling and Blending modelling, compliance and Foreign Trade Zone (FTZ) management, performance management with KPIs and scorecards, business analytics and data visualization, process mapping, stochastic modelling/simulation, and discrete event simulation.

Mohammed Hussain completed his Bachelor's in Chemical Engineering and Master's in Industrial Engineering with a background in Optimization. As a Sr. Technical Consultant in the AspenTech Petroleum Supply Chain team, he has helped troubleshoot PIMS model issues like convergence and Local Optima, and worked on model tuning for performance improvements. He has also worked on PIMS upgrade projects, model migration from PIMS-DR to PIMS-AO and Unified PIMS. Along with this, he has experience with delivering multiple trainings across the Petroleum Supply Chain suite, including foundational and advanced PIMS classes, Aspen Petroleum Scheduler, Multi-Blend Optimizer, and Aspen Unified courses.