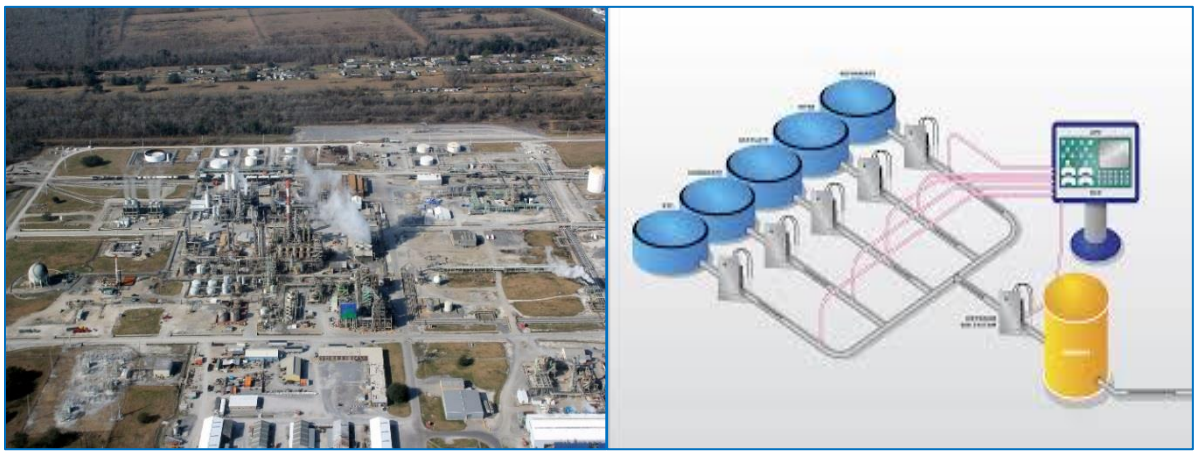
Tel No:+97126654546 | Fax No:+97126654182 | Email: training@cmc-me.com | www.cmc-me.com



PE232:
Gasoline Blending for Refineries

Training Description:

The introduction of new types of green gasolines and diesels such as ethanol blends (E5, E10, CBOB, RBOB), ultra-low sulfur diesel (ULSD), first and second-generation biodiesels (B2-20), and possibly cleaner bunkers to the worldwide fuels markets has turned blending into a highly technical process. Furthermore, because of the 30 plus specifications that must be met simultaneously, the difficulty of formulating gasoline and diesel blends has been expanded by several orders of magnitude.

This intensive course covers a comprehensive overview and discussion of gasoline and diesel blending techniques, technology and cost/benefits. It addresses contemporary issues such as the latest specifications, ultra-low sulfur fuels, impact of Ethanol and Bio-diesel blending, and environmental impact of various gasoline and diesel specifications. Case studies are used to illustrate the relative importance of each aspect of the fuels blending operation, together with specific exercises. The course allows participants to interact closely with both the instructor and others in attendance to exchange ideas on blending techniques.

This very comprehensive course is designed for traders, blending engineers, senior operators, product coordinators, refinery planners, refinery lab personnel, as well as fuels marketers, and provides a complete overview and discussion of gasoline and diesel blending techniques, technology and cost/benefits. It addresses contemporary issues such as the latest specifications, ultra-low sulfur fuels, impact of Bio-fuels, Ethanol and Bio-diesel blending, and environmental impact of various fuel specifications. Case studies are used to illustrate the relative importance of each aspect of the gasoline and diesel blending operation, together with specific exercises.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Apply and gain a good working knowledge on gasoline blending in refineries
- ✓ Identify the types of blending that includes sequential, tank to tank and in-line blending
- ✓ Discuss the specifications, components and additives of gasoline blending
- ✓ Identify the basics of fuel chemistry covering combustion and refinery fuel operations
- ✓ Recognize the typical blending equipment that includes in-line blenders, on-line analyzers and tank gauging
- ✓ Carryout trends in blending, blending control and optimization steps
- ✓ Apply blending economics and the optimization steps technique for blending
- ✓ Discuss quality assurance and interpret clean fuels environmental issues
- ✓ Identify the benefits of improved blending

Training Designed for:

This course is intended for Traders, Blending Engineers, Senior Operators, Product Coordinators, Refinery Planners, Refinery Lab Personnel, Fuels Marketers and all Engineers involved in the design, operation and troubleshooting of refining facilities. Additionally, this course will be useful to any personnel wishing to gain a perspective on refinery production planning and how the blending of products fits into the refinery economics.

Tel No:+97126654546 | Fax No:+97126654182 | Email: training@cmc-me.com | www.cmc-me.com

Training Requirement:

"Hand's on practical sessions, equipment and software will be applied during the course if required and as per the client's request."

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client's learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

- PRE-TEST
- Introduction to Blending
  - Types of Blending
    - Sequential
    - Tank to Tank
    - In-Line Blending
- Specifications, Components & Additives
  - Typical Specs (US, EU, World) for Conventional, RFG, Diesel
  - Blendstock Components and Typical Properties
  - Additives (Octane & Cetane Boosters, Detergents, PP Depressants) and Dyes
  - Linear/Non-Linear Property Blending
  - Component Interactions and Effects on Specs

DAY TWO:

- Basics of Fuel Chemistry
  - Combustion
  - Refinery Fuel Operations
- Typical Blending Equipment
  - In-Line Blenders
  - On-Line Analyzers (Conventional, NIR, NMR, Raman) for Octane, RVP, Dist, S, Cetane, CP, FP, CFPP, etc. & Typical Performance
  - Tank Gauging (Float, Servo, Radar) & Typical Performance
  - Planning, Control, Optimization
- Trends in Blending

DAY THREE:

- The Blending Control & Optimization Steps
  - Types of Optimizers
  - Typical Property Correlation Equations for Octane, RVP, Dist, Cetane Index
  - Planning of Blends/Generating Blend Orders
  - Executing a Blend/Quality Control
- Blending Economics
  - Blend Component Pricing Methods
  - Blend Profit Calculations and Optimization Methods

DAY FOUR:

- Optimization Technique for Blending
  - Modelling Issues
  - Problems in Blending
- Quality Assurance
  - Laboratory Measurements (ASTM Test Methods for Gasoline and Diesel)
  - On-Line Analyzers (Advantages vs. Single Lab Analysis, State-of-the-Art NIR & NMR Analyzers for Blend Control)
- Clean Fuels & Environmental Issues
  - EPA Complex (Emissions) Models for Gasoline
  - Impacts of USA and EU Regulations (Renewable Fuels (RFS2), RIN's /LCFS/Cap & Trade, Ethanol Blending, including New E15 Waiver, Sulfur Reduction, Testing, Contamination, Bio-diesel (B2-20) Blending
- Practical Sessions
  - This hands-on, highly-interactive course includes real-life case studies and exercises

DAY FIVE:

- Benefits of Improved Blending
  - Inventory Reduction
  - Quality Giveaway Minimization
  - Tankage Minimization
  - Blend Key Performance Indicators
- Open Form Q&A Session
  - Summary of each Participant Blending Operation
  - Exchanging Problems/Handling of Common Problems
- Course Conclusion
- POST-ASSESSMENT and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

Aisha Relativo - Training & Career Development Manager
aisha@cmc-me.com / training@cmc-me.com
Tel.: +971 2 665 3945 or +971 2 643 6653 | Mob.: +971 52 2954615