

Roadmap for Refinery Fuels Blending



Announcing Professional Training Seminar

Strategic Fuels Blending Management and Technology

When: **October 10-12, 2018**
Where: **Beijing, China**
Payment Deadline: **September 10, 2018**
Early Bird Deadline: **August 10, 2018**

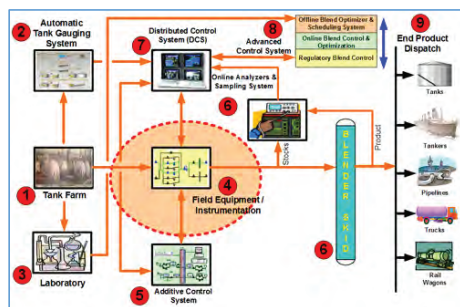
Early Bird and Group Discounts available. Seats are limited.

[Register Now](#)



In today's global economy of fluctuating crude oil prices, the worldwide refining industry is struggling with uncertainty of business existence and profitability. Costs are rising while refining volumes are decreasing. High fuel prices in recent years have reduced the global use, resulting in an oversupply of reserves. As a result, the volumes of crude oil being refined have decreased. For countries with government controlled fuel and crude oil prices, the diminished refining volumes become a critical issue.

The Strategic Fuels Blending Management and Technology workshop is second of three course series, [Strategic training curriculum for refinery offsite operations](#). This course, the second part of this curriculum, is aimed at providing information and discussing the advanced fuels blending principles and technology.



What you will learn:

The course will discuss the following topics in 4 daily sessions of 4-5 topics each of 25-30 minutes. These topics are covered in 800+ slides.

- Overview and fundamentals
- Blending field equipment
- Qualities Analysis and Measurements
- All about octane and its measurements
- Linear and non-linear Blend Models
- Blend Optimization and Specifications
- Blend Optimization and Specifications
- Regulatory Blend Control
- Offline Blend Optimization and Planning
- Online Blend Control and Optimization
- Blending Project Justification
- Blending Project Implementation
- Wrap-up and Winding down

[Click here](#) for detailed course topics

[Click here](#) for course registration details

Who Should Attend:

The seminar is aimed at and is suitable for:

- **Mandatory** – Blending Manager, Process Engineer, Blending Engineer, Control System engineer, Analyzer engineer, Offsite Operators, Blending Operators, Offsite Field Operators, Fuels / Crude Traders
- **Recommended** – Control System Manager, IT Manager, Refinery Planner/Scheduler, Control System Engineer
- **Optional** – Refinery Manager, IT Engineer/Analyst, Field Operators, Maintenance Technician

Course Director:



Dr. Suresh Agrawal
President, Offsite Management Systems LLC

Dr. Agrawal has advanced degrees in Chemical Engineering from I.I. T's (India, USA). He has 30+ years of experience at senior technical / management positions

with international companies and has successfully managed and executed many advanced refinery offsite operation automation projects in numerous countries. He has published and presented 30+ papers in international publications and conferences in the areas of refinery offsite operations automation. He has also acted as a consultant to many refining and process industries worldwide, and delivers training seminars in the areas of his expertise.

You will receive in this course:

- 125 Pages course manual with 800+ course slides
- [Free copy of 811 pages, \\$260 value, MNL58 - Petroleum Refining and Natural Gas Processing, Editors: Riaz M., Eser Semih, Agrawal Suresh, Peña Diez José, Published: 2013](#)
- Excel based LP Optimization software on CD for classroom and take-home exercises
- Free consultation for individual refineries offsite operations problems and solutions



If you will like to review curriculum in detail, please [click here](#).

Phone: 281-650-3707, Fax: 866-450-4035, Email: training@globaloms.com

[Register Now](#)

This promotional e-mail was sent to you because of your professional involvement and interest in the Oil & Gas refining Industry.

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Offsite Management Systems LLC

*Consultant and Automation Solutions Provider
for Refinery Offsite Operations*

Redefining Excellence...™

www.globaloms.com

(P) 832-821-8001 (F) 866-450-4035 (E) training@globaloms.com

Proudly Presents a Professional Training Seminar

Strategic Fuels Blending Management and Technology

Course Instructor: Dr. Suresh S. Agrawal

Founder & CEO, Offsite Management Systems LLC, Houston, USA

October 10-12, 2018

(8AM - 5PM)

Beijing, China

Registration and Welcome October 10, 2018 8AM- 9AM

Venue: Hotel Fairmont

8 Yong An Dong Li, Jian Guo Men Wai Avenue,
Chaoyang District, Beijing, China, 100022,

Email: beijing@fairmont.com, TEL + 86 10 8511 7777

(Participants can avail of the special group discounted room rate)

***(Venue subject to change without notice and all registrants will be informed
by email and/or phone to inform of any changes in the venue, if any)***

Fee: US\$ 2,995 / person

Early Bird US\$ 2,945 / person if registered before August 10, 2018

Deadline to Register is September 10, 2018

Only limited seats available, so hurry to reserve your spot!



Payments and Confirmation

Payment Options

Payment can be made by credit card or bank transfer-whichever is more convenient for you. For international funds transfer, please contact us for account information at training@globaloms.com

Discounts

1. **Early Bird discount:** Register early and receive a discount of \$50. Registration must be received 30 days prior to the beginning of the course date. Coupon code is "**early-bird-special**"
2. **Group Discount:** Register 3 or more attendees from the same organization and receive discount of \$50/person. This can be used also with Early Bird Discount if eligible. Coupon code is "**group-discount**"

Confirmation Letter

OMS confirms in writing after the seat registration has been received. However, the final course registration will be confirmed only after the payment in full. If you have not received confirmation letters after seat registration and/or payment for an OMS Public Course, please contact training@globaloms.com

What would the course fee include?

- Mid-morning breakfast, lunch and after-noon tea/snacks.
- Dinner with the instructor on the second day of the course
- 125+ pages Course Manual with 800+ course slides
- Free copy of 811 pages, Valued US\$260 book **MNL58-Petroleum Refining and Natural Gas Processing**, Published by ASTM International and Edited By Riazi M., Eser Semih, Agrawal Suresh, Peña Díez José, Published: 2013 (http://www.astm.org/DIGITAL_LIBRARY/MNL/SOURCE_PAGES/MNL58.htm)
- Free consultation with your refinery specific challenges on the last day of the course.

Cancellation and Refunds

Can't make your scheduled course?

If you are unable to attend your registered course, simply send a request for a substitute course schedule in the future. Contact training@globaloms.com to transfer and be aware that transfers are subject to space allocation. There is no additional charge for transferring to a different course in future. However, cancellation on or after the first day of a course is subject to forfeiting of the full course fee. Please see our refund policy below for more details.



Training Seminars

Refund Policy

OMS will provide refund per following schedule of cancellation request before start of the event:

- More than 21 days – 100 % refund
- Between 14 to 21 days – 75% refund
- Between 7 to 14 days – 50% refund
- Before 7 days – No refund

If you wish to cancel or change your registration, please contact training@globaloms.com. OMS will refund your payment 100% less processing fee if the course fee is cancelled by OMS due to inadequate number of registrations.

Policies

Travel

OMS is not responsible in any way for the purchase of non-refundable airline tickets or the cancellation / change fees associated with canceling a flight. OMS encourages attendees to call and confirm whether a specific course is running before purchasing airline tickets. OMS retains the right to cancel a course until 3 weeks prior to the scheduled presentation date.

Dress - Casual business attire

Personal Property

Attendees are responsible for all personal belongings during the length of the course while in hotel and other meeting space; this includes all breaks, lunches, and overnight accommodations. OMS does not assume responsibility for any missing or damaged articles.

Additional information Statements made by instructors do not represent the position of OMS. No audio-recording or videotaping is permitted. OMS reserves the right to substitute an instructor(s). Course prices are subject to change without notice.

...Redefining Excellence


OMS-02 Strategic Fuels Blending Management and Technology
Training Course
INTRODUCTION

It is becoming difficult for refining industry worldwide to cope with strict fuel quality and emission control requirements and regulations by local and foreign consumers and authorities. Unstable and high crude oil prices add further to their plights. Refiners are resorting to methods to conform to low sulphur, low toxic content fuel specifications, and finding that advanced control, and optimization system in addition to process unit modification and additions is one of the suitable, workable, and economical solutions. However, successful implementation of an advanced control and optimization system for gasoline, diesel and fuel oil products requires that plant both operators and engineers alike understand in details the technology and operations of such system available in the market place today.

The information imparted during the seminar will affirm the existing knowledge and increase learning and comprehension of fuel blending systems, thereby contributing toward efficient and economic management. The seminar will cover all technical, operational, modeling, and economical aspects of fuels blending control and optimization systems.

One of the salient features of this seminar is to discuss the problems of blending operation, if any, in the registrant's own refinery and receive valuable feedback from the world's leading blending expert. Attendees are encouraged to take advantage of this session. A questionnaire is given to the registrants to prompt their interaction for this session.

TRAINING OUTLINE
• Day-1 Overview of blending operation

1. Overview of Refining
2. Refinery Offsite Operations
3. Fuel Blending Operations in Refining
4. Blending Problems and Challenges
5. Blenders Configurations
6. Tank Farm and Automatic Tank Gauging System
7. Pumps, MOV's and Control Valves
8. Additives Control and Monitoring
9. Blend Header Design Considerations
10. Quality Relationships and Measurements
11. Lab Analysis of Stock and Product Qualities
12. Online Analysis of Stock and Header Qualities
13. Model Based Tank Qualities Measurement
14. The Mysteries of Octane
15. Octane Measurement by Knock Engine
16. Integrated Analyzers Technology and Applications
17. Octane Measurement by Spectrum based technology
18. Comparison of Knock engine versus Spectrum based methods
19. NIR and NMR versus CFR analyzers - Selection and Cost Effectiveness

• Day-2 Advanced Blend Control, Optimization and Planning

1. Linear Blend Models
2. Non-linear Blend Models
3. Methods to Handle Blend Non-linearity
4. Control Matrix of Qualities
5. Spectrum based Blend Indexes
6. Advanced Blend Control Strategy
7. Blend Optimization
8. How to estimate and update Blending values
9. Gasoline, Diesel and Fuel Oils Specifications
10. Biofuels - A perspective Part-I Gasohol
11. Biofuels - A perspective Part-II
12. Optimum Blend Control System Strategy
13. Regulatory Blend Control Operations
14. Blend Trim Control

15. Refinery-wide Planning & Scheduling
16. Ethanol Blending
17. Offline Blend Planning and Optimization
18. Demonstration of An Offline Blend Optimizer System
19. Lab Exercise to solve an LP problem of a small refinery

• Day-3 Blending Project Justification and Implementation

1. Advanced Online Blend Control & Optimization
2. Control and Optimization of run-down blending system
3. Data Reconciliation and Feedback
4. Technology Set of Hardware and software
5. System Architecture - Integration and Interfaces
6. Where and how to start
7. Methodology to Assess the Current State of Blending
8. Identifications of Automation Areas
9. The Quality giveaway - Concept, Cost and reduction Benefits
10. Project Implementation Phases & Strategy
11. How to realize and sustain benefits
12. Required Enterprise Changes
13. Special Topic - Blending and Hydrocarbon Management
14. Putting it All Together
15. Discussion Forum - Individual Refinery Blending Operations
16. Feedback and Certificate Awards

The training course covers about 50+ comprehensive topics of 30 minutes each and spans over three days between 9AM-5PM.

COURSE INSTRUCTOR

Dr. Suresh S. Agrawal is founder and president of Offsite Management Systems LLC and has developed and installed innovative and technologically advanced automation software products, and integrated solutions for the automation of offsite operations of Chemical, Oil and Gas (COG) Industries. Dr. Agrawal has 25+ years of experience at senior positions with companies, including being Director of Refinery Offsite Operations at ABB Industrial Systems Inc., Houston, TX. He has also worked with reputable companies such as 3X Corporation, New Jersey and Exxon Corporation, New Jersey. Dr. Agrawal has successfully managed many advanced offsite refinery control projects in numerous countries. He has a doctorate degree (Ph.D.) in Chemical Engineering from the Illinois Institute of Technology, Chicago, and a Bachelor's Degree in Chemical Engineering from Indian Institute of Technology (I.I.T.), Mumbai, India. He has published more than 30 technical papers in the area of advanced control of refinery onsite / offsite operations.

2017-2020 Course Schedule:

Dates	Venue
6-8 Jun, 2017	Singapore
12-14 Jun, 2018	Houston, Texas
11-13 Jun, 2019	Singapore
9-11 Jun, 2020	Dubai, UAE

Registration: [Click here](#) to visit the course page and then click on above Seminar dates to register and pay online. An email will be sent to you after successful registration.

For further information, please contact

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OMS-02 Strategic Fuels Blending Management and Technology Training Curriculum

Day-1 Overview of Blending operation				Day-2 Advanced Blend Control, Optimization and Planning				Day-3 Blending Project Justification and Implementation			
Module-1	Session-1 Overview and fundamentals			Module-5	Session-1 Linear and non-linear Blend Models			Module-9	Session-1 Online Blend Control and Optimization		
	Overview of Refining				Linear Blend Models				Advanced Online Blend Control & Optimization		
	Refinery Offsite Operations				Non-linear Blend Models				Control and Optimization of run-down blending system		
	Fuel Blending Operations in Refining				Methods to Handle Blend Non-linearity				Data Reconciliation and Feedback		
	Blending Problems and Challenges				Control Matrix of Qualities				Technology Set of Hardware and software		
			Gasoline, Diesel and Fuel Oils Specifications			System Architecture - Integration and Interfaces					
Module-2	Session-2 Blending field equipment			Module-6	Session-2 Blend Optimization and Specifications			Module-10	Session-2 Blending Project Justification		
	Blenders Configurations				Advanced Blend Control Strategy				Where and how to start		
	Tank Farm and Automatic Tank Gauging System				Blend Optimization				Methodology to Assess the Current State of Blending		
	Pumps, MOV's and Control Valves				How to estimate and update Blending values				Identifications of Automation Areas		
	Additives Control and Monitoring				Spectrum based Blend Indexes				The Quality giveaway - Concept, Cost and reduction Benefits		
	Blend Header Design Considerations				Biofuels - A perspective Part-I Gasohol						
			Biofuels - A perspective Part-II Biodiesel								
Module-3	Session-3 Qualities Analysis and Measurements			Module-7	Session-3 Regulatory Blend Control			Module-11	Session-3 Blending Project Implementation		
	Quality Relationships and Measurements				Optimum Blend Control System Strategy				Project Implementation Phases & Strategy		
	Lab Analysis of Stock and Product Qualities				Regulatory Blend Control Operations				How to realize and sustain benefits		
	Online Analysis of Stock and Header Qualities				Blend Trim Control				Required Enterprise Changes		
	Model Based Tank Qualities Measurement				Ethanol Blending				Special Topic - Blending and Hydrocarbon Management		
Module-4	Session-4 All about octane and its measurements			Module-8	Session-4 Offline Blend Optimization and Planning			Module-12	Session-4 Wrap-up and Winding down		
	The Mysteries of Octane				Refinery-wide Planning & Scheduling				Putting it All Together		
	Octane Measurement by Knock Engine				Offline Blend Planning and Optimization				Discussion Forum - Individual Refinery Blending Operations		
	Integrated Analyzers Technology and Applications				Demonstration of An Offline Blend Optimizer System				Feedback and Certificate Awards		
	Octane Measurement by Spectrum based technology				Lab Exercise to solve an LP problem of a small refinery						
	Comparison of Knock engine versus Spectrum based methods										
	NIR and NMR versus CFR analyzers - Selection and Cost Effectiveness										

OMS Strategic Training Courses Curriculum for Refinery Offsite Operations

OMS course No. ----->		OMS-01	OMS-02	OMS-03	OMS-04
Business Function	Responsibility	Automation of Refinery Offsite Operations	Strategic Fuels Blending Management and Technology	Principles and Applications of LP/NLP Programming in Refining Industry	Hydrocarbon Management in the Refinery Industry
Management	Refinery Manager	●	●	●	●
	OM&S Manager	●	●	●	●
	Blending Manager	●	●	●	●
	Control System Manager	●	●	●	●
	IT Manager	●	●	●	●
Planning and Scheduling	Refinery Planner	●	●	●	●
	Refinery Scheduler	●	●	●	●
Engineering	Process Engineer	●	●	●	●
	Blending Engineer	●	●	●	●
	Control System Engineer	●	●	●	●
	IT Engineer/Analyst	●	●	●	●
	Analyzer Engineer	●	●	●	●
Operations	Offsite Operators	●	●	●	●
	Blending Operator	●	●	●	●
	Field Operator	●	●	●	●
	Maintenance	●	●	●	●
Traders	Fuels Traders	●	●	●	●
	Crude Traders	●	●	●	●
Finance	Finance Manager	●	●	●	●
	Yield Accountant	●	●	●	●
	Finance Analyst	●	●	●	●
● Optional ● Recommended ● Mandatory					

Past Participants



India



Singapore



USA



Czech Republic



USA



Thailand



Serbia



Hungary



Serbia



South Africa



Poland



Norway



Thailand



USA

USA



Thailand



Thailand



USA



Mexico



India



USA



Columbia



India, USA



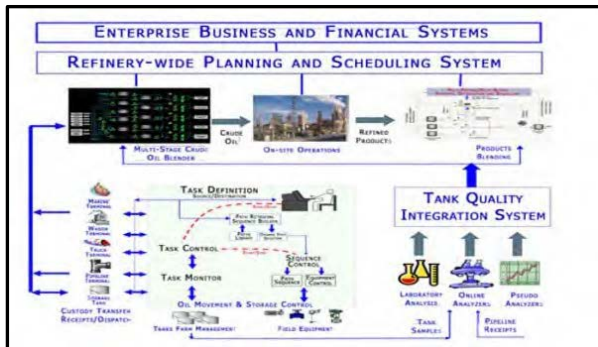
Columbia



Spain

Strategic Training Curriculum for the Management , Control, Optimization and Reconciliation of Refinery Offsite Operations

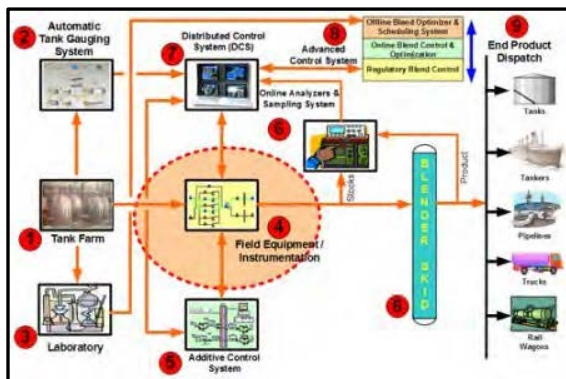
1. OMS-01 Strategic Management and Automation of Refinery Offsite Operations



This workshop aims at improving the attendees' knowledge and understanding of the principles of operation and decision-making involved in the management of refinery offsite operations, such as crude / products blending control and optimization, tanks farm management, terminal and custody transfer, oil movement etc.

This workshop will affirm the existing knowledge and increase learning and comprehension of the various systems of refinery offsite automation, thereby contributing toward efficient and economic management of the operations.

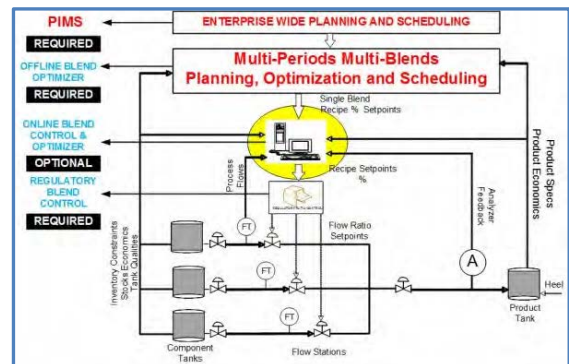
2. OMS-02 Strategic Fuels Blending Management and Technology



It is becoming difficult for refining industry worldwide to cope with strict fuel quality and emission control requirements and regulations by local and foreign consumers and authorities. Unstable and high crude oil prices add further to their pain. Refiners are resorting to methods to conform to low sulphur, low toxic content fuel specifications, and finding that advanced control, and optimization system, in addition to process unit modification and additions, is a suitable, workable, and economical solution.

However, successful implementation of an advanced control and optimization system for gasoline, diesel and fuel oil products requires that both plant operators and engineers alike understand in details the technology and operations of such system available in the market place today. This workshop will cover in details each aspect of hardware, field equipment, software, interfaces and over-all integration of an advanced blend control system to leave the attendees with deep understanding and working knowledge of such a system.

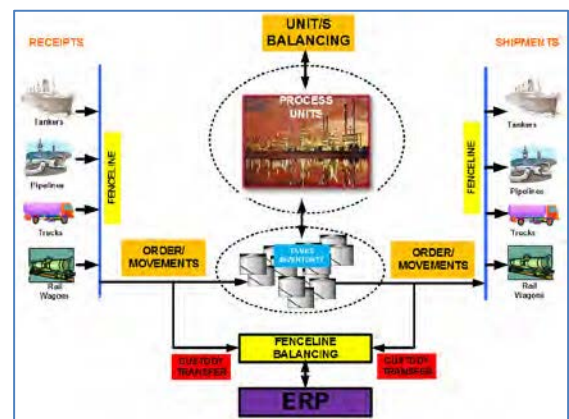
3. OMS-03 Principles and Applications of Linear / Non-linear Programming in the Refining Industry



Advanced process control strategies invariably use linear and non-linear programming methods to solve complex and non-unique process models solutions. These techniques are employed in refinery planning, blend recipe formulations, optimum operating parameters for process units, etc.

The information imparted during this workshop will introduce the techniques of linear programming and affirm the shared knowledge by hand-on lab exercise. Attendees can bring information about their own refinery and blending operations to solve them using actual commercial system demonstrated in the course. The seminar will cover all technical, operational, modeling, and economical aspects of planning, optimization of daily refinery operations.

4. OMS-04 Hydrocarbon Management in the Refining Industry



The term Hydrocarbon management or mass reconciliation or oil loss all mean to the balancing of the input and output of a refinery. The typical best run refineries average imbalance is between 0.35-0.55% of refinery crude throughput and this translates into yearly loss of 35-60M\$ for a 300KBD refinery with crude price of \$100/bl.

The information imparted during this workshop will introduce the principles of hydrocarbon losses and their methodology to reconcile using automation technology. This seminar will also discuss various software systems used in the industry.

These training courses cover about 45 topics of 30-45 minutes each and each spans over three to five day's duration depending upon local working hours. These courses are offered as both a public and/or private course directly by OMS and /or in affiliation with various training institutions worldwide.

The extensively hands-on lab exercises use real-life problems and three commercial software licensed for the training purposes are used to demonstrate and train the attendees in actual problem solving methodology. It is, therefore, advisable for attendee to bring his/her laptop to gain maximum individual exposure to methodology shared in this course. Attendees are encouraged to contact the course instructor via hosting training institute sufficiently in advance of course date to get information about required data to use their specific refinery and blending operations in the lab exercises.

2015-2020 Global Training Schedule					
Month	OMS01	OMS02	OMS03	OMS04	Venue
Mar-2017	14-16				Houston, Texas
Jun-2017		6-8			Singapore
Sep-2017			12-14		London, UK
Dec-2017				12-14	Mumbai, India
Mar-2018	13-15				Dubai, UAE
Jun-2018		12-14			Houston, Texas
Sep-2018			11-13		Dubai, UAE
Dec-2018				11-13	London, UK
Mar-2019	12-14				Mumbai, India
Jun-2019		11-13			Singapore
Sep-2019			10-12		Houston, Texas
Dec-2019				10-12	Dubai, UAE
Mar-2020	10-12				London, UK
Jun-2020		9-11			Dubai, UAE
Sep-2020			8-10		Singapore
Dec-2020				15-17	Houston, Texas

Who Should Attend?

OMS Training seminars are very comprehensive in nature and cover 50-60 topics of 25-30 minutes each. Each topics are carefully selected for all three courses to cover management, control, and optimization of refinery offsite operations, which produce 80-90% of refinery products. It is almost pertinent that refinery professional are trained adequately and continuously to perform their job functions. These courses are aimed at the following professionals in varying degrees of interests and jo requirements.

- **Management** – Refinery Manager, OM&S Manager, Blending Manager, Control System Manager and IT Manager
- **Planning and Scheduling** – Refinery Planner, Refinery Scheduler and Blending scheduler
- **Engineering** – Process Engineer, Blending Engineer, Control System Engineer, IT/Engineers/Analyst and Analyzer Engineer
- **Operations** – Offsite operators, Blending Operators, Field Operators, Maintenance Staff
- **Financial** – Finance Manager, Yield Accountant, Finance Analyst

Following matrix gives a guideline for various above professionals to attend which training courses.

Business Function	Responsibility	Strategic Training Curriculum			
		1	2	3	4
Management	Refinery Manager	●	●	●	●
	OM&S Manager	●	●	●	●
	Blending Manager	●	●	●	●
	Control System Manager	●	●	●	●
	IT Manager	●	●	●	●
Planning and Scheduling	Refinery Planner	●	●	●	●
	Refinery Scheduler	●	●	●	●
Engineering	Process Engineer	●	●	●	●
	Blending Engineer	●	●	●	●
	Control System Engineer	●	●	●	●
	IT Engineer/Analyst	●	●	●	●
	Analyzer Engineer	●	●	●	●
Operations	Offsite Operators	●	●	●	●
	Blending Operator	●	●	●	●
	Field Operator	●	●	●	●
	Maintenance	●	●	●	●
Traders	Fuels Traders	●	●	●	●
	Crude Traders	●	●	●	●
Finance	Finance Manager	●	●	●	●
	Yield Accountant	●	●	●	●
	Finance Analyst	●	●	●	●

● Optional ● Recommended ● Mandatory

COURSE INSTRUCTOR

Dr. Suresh S. Agrawal is founder and president of Offsite Management Systems LLC and has developed and installed innovative and technologically advanced automation software products, and integrated solutions for the automation of offsite operations of Chemical, Oil and Gas (COG) Industries. Dr. Agrawal has 25+ years of experience at senior positions with companies, including being Director of Refinery Offsite Operations at ABB Industrial Systems Inc., Houston, TX. He has also worked with reputable companies such as 3X Corporation, New Jersey and Exxon Corporation, New Jersey. Dr. Agrawal has successfully managed many advanced offsite refinery control projects in numerous countries. He has a doctorate degree (Ph.D.) in Chemical Engineering from the Illinois Institute of Technology, Chicago, and a Bachelor's Degree in Chemical Engineering from Indian Institute of Technology (I.I.T.), Mumbai, India. He has published more than 20 technical papers in the area of advanced control of refinery onsite / offsite operations.

For further information, please contact

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COURSE INSTRUCTOR PROFILE



Dr. Suresh S. Agrawal
Founder and CEO

Offsite Management Systems LLC
Houston, Texas, USA

Email: s.agrawal@globaloms.com

Phone: 281-650-3707



Dr. Suresh S. Agrawal is president of Offsite Management Systems LLC (OMS), Houston, Texas, USA. OMS specializes in advanced process control systems and has developed, installed and managed many innovative and technologically advanced automation software products, and integrated solutions for the automation of offsite operations of Chemical, Oil and Gas (COG) industries in countries like India, Mexico, Columbia, USA and Eastern and Western European countries.

He graduated from Indian Institute of Technology, Mumbai, India with a Bachelor of Chemical Engineering in 1972. He obtained a Master of Chemical Engineering from Illinois Institute of Technology, Chicago, USA in 1975 and gained his Ph.D. degree in Chemical Engineering from Illinois Institute of Technology, Chicago, USA in 1981.

Dr. Agrawal has 30+ years of experience at senior technical / management positions with international companies and he has successfully managed many advanced refinery process control projects in numerous countries. Dr. Agrawal is a registered professional engineer in the state of Illinois, USA and is a member of American Institute of Chemical Engineers and Instrumentation Society of America. He has published and presented 20+ papers in international publications and conferences in the areas of advanced process control. He has also acted as a consultant to a number of refining and process industries worldwide, and delivers training seminars in the areas of his expertise.