NEW in 2018

• Advanced Project Management Workshop (pg 29)
• Competent Person Fall Protection (pg 21)
• Managing Project Controls for Contractors and Owners (pg 28)
• More Virtual/Blended Learning Options Through PetroAcademy, including:
  - Basic Petroleum Technology Principles (pg 32)
  - Gas Conditioning and Processing (pg 6)
  - Process Safety Engineering Principles (pg 8)
  - Production Operations 1 (pg 18)
  - Production Technology for Other Disciplines (pg 18)
A competent workforce has always been critical for our industry’s success, but it is even more important with challenging product prices. Doing more with less is how we can thrive in hard times, but that requires a very competent workforce.

This guide presents the industry’s most comprehensive workforce development programs — focused on building competent people. PetroSkills brings together industry-driven and industry-approved programs that deliver flexible, practical, fit-for-purpose training and development. This guide can help you find ways to advance your technical competence and build your company’s value.

Since the first offerings of Production Operations 1 and the Campbell Gas Course® over 50 years ago, PetroSkills instructor-led training programs have set the standard for excellence from subsurface to downstream. This guide presents hundreds of sessions offered worldwide by top industry experts in each technical discipline across the value chain. Our competency-based programs are designed and delivered under the direction of the PetroSkills Alliance which includes some of the top petroleum companies worldwide, working together, to offer an industry-driven and vetted set of courses, products and services.

NEW courses to look for in this edition include:

- Advanced Project Management Workshop (APMW) - see page 29
- Competent Person Fall Protection (FPST) - see page 21
- Project Controls for Contractors and Owners (PC21) - see page 28

In addition to our instructor-led programs, our digital learning solutions and professional services continue to lead the industry. This guide outlines our electronic solutions ePilot™, ePetro™, ActiveLearner®, Compass® and PetroCore® - see page 3 for more details.

We are also proud to announce the expansion of our blended/virtual learning program, PetroAcademy™. This unique course model delivers the same competency development as our face-to-face courses via virtually delivered Skill Modules™, available from anywhere in the world.

The following blended/virtual courses are available now, and we will be adding more throughout 2018.

- Basic Petroleum Technology Principles – page 32
- Gas Conditioning and Processing – page 6
- Process Safety Engineering - see page 8
- Production Operations 1 – page 18

For more information, see the back cover, or petroskills.com/blended.

I hope you find this guide useful. If there is any way that we can help you, your team, or your organization, please don’t hesitate to contact me personally at ford.brett@petroskills.com, or contact our Customer Service Department at +1.918.828.2500.

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**4 Course Progression Map**

### GAS PROCESSING

6. Gas Conditioning and Processing (Campbell Gas Course®) – G4
6. Gas Conditioning and Processing - G4 (Virtual/Blended course)
8. Gas Treating and Sulfur Recovery – G6
7. LNG Short Course: Technology and the LNG Chain – G29
7. Overview of Gas Processing – G2
8. Practical Computer Simulation Applications in Gas Processing – G5
8. Process Safety Engineering – PS4
8. Process Safety Engineering Principles - PSE (Virtual/Blended course)

### PROCESS FACILITIES

10. Applied Water Technology in Oil and Gas Production – PF21
11. CO₂ Surface Facilities – PF81
9. Introduction to Oil and Gas Production Facilities – PF2
9. Oil Production and Processing Facilities – PF4
10. Relief and Flare Systems – PF44
10. Separation Equipment - Selection and Sizing – PF42
11. Troubleshooting Oil and Gas Processing Facilities – PF49

### INSTRUMENTATION, CONTROLS & ELECTRICAL

13. Flow and Level Custody Measurement – IC73
12. Instrumentation and Controls Fundamentals for Facilities Engineers – IC3
12. Instrumentation, Controls and Electrical Systems for Facilities Engineers – ICE21
12. PLC and SCADA Technologies – IC71
13. Practical PID Control and Loop Tuning – IC74
13. Valve and Actuator Technologies – IC72

### MECHANICAL ENGINEERING

15. Compressor Systems - Mechanical Design and Specification – ME46
14. Corrosion Management in Production/Processing Operations – PF22
14. Piping Systems - Mechanical Design and Specification – ME41

### PIPELINE ENGINEERING

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16. Offshore Pipeline Design and Construction – PL43
16. Terminals and Storage Facilities – PL44
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- 17 Fundamentals of Offshore Systems Design and Construction – OS4
- 17 Overview of Offshore Systems – OSH
- 17 Overview of Subsea Systems – SS2

### PROCUREMENT/SUPPLY CHAIN MANAGEMENT
- 26 Contracts and Tenders Fundamentals – SC41
- 26 Effective Materials Management – SC42
- 27 Inside Procurement in Oil and Gas – SC61
- 27 Strategic Procurement and Supply Management in the Oil and Gas Industry – SC62
- 27 Supplier Relationship Management – SC63

### PRODUCTION AND COMPLETIONS ENGINEERING
- 19 Gas Production Engineering – GP0
- 18 Production Operations 1 – PO1 (Also available as a Virtual/Blended course)
- 18 Production Technology for Other Disciplines – PTO (Also available as a Virtual/Blended course)
- 18 Surface Production Operations – PO3
- 19 Surface Water Management in Unconventional Resource Plays – SWM

### OPERATIONS & MAINTENANCE
- 20 Amine Sweetening and Gas Dehydration for Operations and Maintenance – OT41
- 21 Applied Maintenance Management – OM21
- 21 Crude Oil Pipeline Operations – OT50
- 20 LNG Facilities for Operations and Maintenance – OT43
- 21 Maintenance Planning and Work Control – OM41
- 20 NGL Extraction, Stabilization and Fractionation for Operations and Maintenance – OT42
- 20 Oil and Gas Processing Facilities for Operations and Maintenance – OT1
- 21 Turnaround, Shutdown and Outage Management – TSOM

### HEALTH, SAFETY, ENVIRONMENT
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- 22 Applied HSE Management – HS28
- 22 Competent Person Fall Protection – FPST
- 23 Fundamentals of Process Safety – PS2
- 23 Risk Based Process Safety Management – HS45

### PETROLEUM BUSINESS
- 25 Advanced Decision Analysis with Portfolio and Project Modeling – ADA
- 24 Basic Petroleum Economics – BEC3
- 24 Cost Management – CM
- 25 Economics of Worldwide Petroleum Production – EWP
- 24 Expanded Basic Petroleum Economics – BEC
- 26 Fundamentals of International Oil and Gas Law – IOG
- 24 Introduction to Petroleum Business – IPB
- 25 Petroleum Finance and Accounting Principles – PFA
- 25 Petroleum Risk and Decision Analysis – PRD
- 26 Strategic Thinking: A Tool-Based Approach – STT

### PROJECT MANAGEMENT
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- 28 Managing Brownfield Projects – FPM42
- 28 Managing Project Controls for Contractors and Owners - PC21
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- 29 Turnaround, Shutdown and Outage Management – TSOM

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- 30 Essential Technical Writing Skills – ETWS
- 31 Making Change Happen: People and Process – MCPP
- 30 Managing and Leading Others – MLO
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Any course is available inhouse at your location. Contact us today. +1.918.828.2500 | petroskills.com | +1.800.821.5933 (toll free North America)
What Sets PetroSkills Apart? The Alliance.

Created in 2001 by BP, Shell, and OGCI, the PetroSkills Alliance provides “important but not unique” high quality, business-relevant, competency-based training. Through its growing membership, the Alliance has successfully evolved into an industry-driven and approved program that spans the value chain.

Mission: Build competent petroleum professionals by delivering learning and development when, where, and how customers need it.

OBJECTIVES:
- Provide the highest quality, business relevant programs that span all technical processes, and give management assurance they have the skilled people needed to maximize asset value
- Offer added value to employees via new, broad-reaching courses that fill gaps, deliver the ability to perform, and provide the assurance to prove it
- Ensure PetroSkills instructors are the best available
- Develop and continuously improve PetroSkills Competency Maps and progression trees; continue to align Competency Maps with corporate business goals
- Lower internal training costs by reducing administrative burdens, improving economies of scale, and/or eliminating marginal courses
- Increase the availability of courses in both the number of offerings and the number of delivery locations, thereby delivering competencies at the lowest total cost

For more information on membership, go to petroskills.com/membership
How do you meet the challenges of competency development?

PetroSkills Solutions

PetroAcademy™
Blended Learning Skill Modules. Integrating live classroom activities, online learning and technical coaching.

Competency Maps
Industry Benchmarks. Developed with industry-leading Alliance members.

Active Learner®
Learning and Compliance Management System. Online, on-the-job access to learning programs, progress tracking, and curriculum development.

Compass®
Competency Management. Web-based software that builds, manages, and assures competency.

ePilot™ and ePetro™
e-Learning. Online learning libraries deliver effective training anytime, anywhere.

PetroCore®
Technical Reference. Online, on-demand access to technical knowledge, documents, and articles.

petroskills.com/solutions
## Facilities Course Progression Map

### Basic
- **Introduction to Oil and Gas Production Facilities** – PF2 p.9
- **LNG Short Course: Technology and the LNG Chain** – G29 p.7
- **Overview of Gas Processing** – G2 p.7

### Foundation
- **Fundamental and Practical Aspects of Produced Water Treatment** – PF23 p.10
- **Applied Water Technology in Oil and Gas Production** – PF21 p.10
- **Process Safety Engineering** – PS4 p.8
- **Risk Based Process Safety Management** – HS45 p.23
- **Fundamentals of Process Safety** – PS2 p.23

### Intermediate
- **Gas Treating and Sulfur Recovery** – G6 p.8
- **Practical Computer Simulation Applications in Gas Processing** – G5 p.8
- **Onshore Gas Gathering Systems: Design & Operation** – PF45 p.11
- **Troubleshooting Oil and Gas Processing Facilities** – PF49 p.11
- **Separation Equipment - Selection & Sizing** – PF42 p.10
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### Specialized
- **CO₂ Surface Facilities** – PF81 p.11
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- **Process Safety Engineering Principles** – PSE Virtual/Blended Course p.8

### Offshore & Subsea
- **Flow Assurance for Offshore Production** – FAOP p.17
- **Fundamentals of Offshore Systems: Design and Construction** – OS4 p.17
- **Offshore Pipeline Design and Construction** – PL43 p.16
- **Onshore Pipeline Facilities: Design, Construction and Operations** – PL42 p.16

### Oil and Gas Processing
- **Oil Production and Processing Facilities** – PF4 p.9
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### Instrumentation, Controls & Electrical
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- **PLC and SCADA Technologies** – IC71 p.12
- **Instrumentation, Controls and Electrical Systems for Facilities Engineers** – ICE21 p.12
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### Pipeline Engineering
- **Onshore Pipeline Facilities: Design, Construction and Operations** – PL42 p.16
- **Terminals and Storage Facilities** – PL44 p.16
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- **General Processing**
- **Electrical Instrumentation & Controls**
- **Offshore & Subsea**
- **Pipeline Engineering**

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- **Introduction to Oil and Gas Production Facilities** – PF2 p.9
- **LNG Short Course: Technology and the LNG Chain** – G29 p.7
- **Overview of Gas Processing** – G2 p.7
- **Concept Selection and Specification of Production Facilities in Field Development Projects** – PF3 p.9
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- **Overview of Offshore Systems** – OS21 p.17

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- **Gas Conditioning and Processing** – G4 p.6
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The Campbell Gas Course® has been the standard of the industry for more than 47 years. Over 36,000 engineers have attended our G4 program, considered by many to be the most practical and comprehensive course in the oil and gas industry.

The Campbell Gas Course® textbooks, Volumes 1 and 2, are routinely updated to reflect evolving technologies in this broad industry. Both hand-methods and computer-aided analysis are used to examine sensitivities of technical decisions. To enhance the learning process, about 30 problems will be assigned, reviewed, and discussed throughout the course. Problems will be solved individually and in teams.

**DESIGNED FOR**
Production and processing personnel involved with natural gas and associated liquids, to acquaint or reacquaint themselves with gas conditioning and processing unit operations. This course is for facilities engineers, process engineers, senior operations personnel, field supervisors, and engineers who select, design, install, evaluate, or operate gas processing plants and related facilities. A broad approach is taken with the topics.

**YOU WILL LEARN HOW TO**
- Application of gas engineering and technology in facilities and gas plants
- Important specifications for gas, NGL, and condensate
- About the selection and evaluation of processes used to dehydrate natural gas, meet hydrocarbon dewpoint specifications, and extract NGLs
- How to apply physical/thermodynamic property correlations and principles to the operation, design, and evaluation of gas processing facilities
- Practical equipment sizing methods for major process equipment
- To evaluate technical validity of discussions related to gas processing
- To recognize and develop solutions for operating problem examples and control issues in gas processing facilities

**COURSE CONTENT**
- Gas processing systems
- Physical properties of hydrocarbons
- Terminology and nomenclature
- Qualitative phase behavior
- Vapor-liquid equilibrium
- Water-hydrocarbon phase behavior, hydrates, etc.
- Basic thermodynamics and application of energy balances
- Process control and instrumentation
- Relief and flare systems
- Fluid hydraulics; two-phase flow
- Separation equipment
- Heat transfer equipment
- Pumps
- Compressors and drivers
- Refrigeration in gas conditioning and NGL extraction facilities
- Fractionation
- Glycol dehydrations; TEG
- Adsorption dehydration and hydrocarbon removal
- Gas treating and sulfur recovery

The Campbell Gas Course® is now available as a blended program. The first half of the material will be delivered virtually through PetroAcademy self-paced e-Learning. The second half will be delivered in the classroom during the five day face-to-face portion of the course. Participants must complete the e-Learning portion of the course before the classroom session begins.

The G4 blended course provides both core and foundation competencies in the areas of gas conditioning and processing. It provides a review of both onshore and offshore operations, and takes a systems approach to walk through engineering fundamentals and gas processing unit and equipment operations. Both hands-on methods and computer-aided analysis are applied to examine sensitivities of technical decisions. The approaches used are applicable to both new designs, and to troubleshooting current facilities operations.

**How does the course schedule work?**
13 Online Skill Modules + 1 Week Instructor-Led Classroom Training = Complete G4 course

After registration, participants will be given access to the e-Learning course content, approximately 52 total hours of self-paced activity organized in 13 modules:
- Hydrocarbon Components and Physical Properties
- Introduction to Production and Gas Processing Facilities
- Qualitative Phase Behavior and Vapor Liquid Equilibrium
- Water / Hydrocarbon Phase Behavior
- Thermodynamics and Application of Energy Balances
- Fluid Flow
- Relief and Flare Systems
- Separation
- Heat Transfer Equipment Overview
- Pumps and Compressors Overview
- Refrigeration, NGL Extraction and Fractionation
- Contaminant Removal - Gas Dehydration
- Contaminant Removal - Acid Gas and Mercury Removal

In the classroom, participants will cover:
- Vapor Liquid Equilibrium
- Hydrate Inhibition
- Multiphase Flow
- Hydrate Inhibitor
- Separation
- Heat Transfer
- Fluid Flow
- Refrigeration
- Fractionation
- Pumps and Compression
- Dehydration
- NGL Extraction
- Contaminant Removal and Protection

**2018 Schedule and Tuition (USD)**

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<td>ABERDEEN, UK</td>
<td>13-23 MAR</td>
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<td>BRISBANE, AUSTRALIA</td>
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<td>DENVER, US</td>
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<td>DUBAI, UAE</td>
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<td>HOUSTON, US</td>
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<td>28 NOV-7 DEC</td>
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**FOR MORE INFORMATION, VISIT PETROSILLS.COM/G4BLENDED**
Overview of Gas Processing – G2

BASIC 3-DAY

G2 is a versatile overview of the gas conditioning and processing industry. This course is designed for a broad audience and is participative and interactive, utilizing basic technical exercises and terminology to communicate key learning points. This course does not cover the technology and engineering principles in depth, and is only recommended for those needing an overview of the industry and common processes and equipment used.

DESIGNED FOR
As a wide ranging overview, it is suitable for interested parties, such as geologists, reservoir engineers, line managers, and sales of business development staff; related specialists like environmental staff, operational staff, and shift foremen; those new to the industry, such as entry-level (1-2 year) engineers; or anyone interested in a general, technically-oriented overview of the gas processing industry.

YOU WILL LEARN
• An overview of natural gas and world energy trends
• Natural gas sources, makeup, properties, specifications, and related oil and gas terminology
• Markets and uses for NGL, LPG, ethane, propane, and butane
• Summary of gas processing costs, and commercial and contract issues in liquids extraction
• How gas is transported and sold
• Overview of the common equipment used in the oil and gas industry, including heat exchangers, pumps, and compressors
• Options for various basic gas conditioning and processing steps, including acid gas removal, dehydration, liquid extraction, product fractionation, LNG overview, pipelines, sulfur recovery, and acid gas injection

COURSE CONTENT
Natural gas and world energy trends • Hydrocarbon components and physical properties • The role of gas processing in the natural gas value chain • Heat transfer equipment • Pumps and compressors • Acid gas removal • Gas dehydration • NGL extraction • Fractionation and stabilization • LNG • Pipelines and storage • Sulfur recovery and acid gas injection

LNG Short Course: Technology and the LNG Chain – G29

BASIC 5-DAY

This LNG Short Course is designed for participants requiring moderate technical coverage, coupled with information on LNG commerce and all parts of the LNG Value Chain. Over 5-days, the course covers technical LNG basics and facility operation topics, plus technical, design, and commercial issues. Selected exercises and syndicates are used to reinforce the main topics of LNG trade and technology. In-house versions are available with either increased technical and operational emphasis or increased project and development emphasis. More in-depth coverage for technical, production, and processing personnel is available in our 10-day course, G4 LNG, Gas Conditioning and Processing - LNG emphasis.

DESIGNED FOR
Commercial and managerial staff looking for a concise overview; engineers new to the LNG industry; operations supervision staff and senior plant personnel; specialists looking to broaden their general knowledge of LNG; and staff involved in LNG commerce and interested in LNG technical fundamentals.

YOU WILL LEARN
• What is LNG, why it is produced, and what is the current status of the industry
• LNG facilities world-wide
• The LNG chain and impact of contractual issues on LNG plant design and operation; LNG pricing
• A survey of commercial and contractual issues
• Project costs, feasibility, development, and issues
• Some technical fundamentals of gas processing, such as molecular weight, heating value, Wobbe Index, vapor pressure, multi-component mixtures, thermodynamics
• Refrigeration: single and multi-component refrigeration cycles
• Technologies used in the production of LNG for base-load and small scale production, issues relating to technology selection, and operation
• Equipment used in the production of LNG: heat exchangers, compressors and drivers used for LNG, pumps, and turbo expanders
• To apply knowledge of LNG gas pretreatment, drying, and refrigeration
• About LNG storage, shipping, and terminals, sizing basis, and small scale tanks
• Types of LNG carriers, marine management issues, and LNG transfer
• LNG importing, regasification of LNG and distribution to consumers, basis for sizing, technology selection, and energy integration
• New developments: development of offshore LNG operations to regasification and liquefaction; coal seam gas project issues
• Site selection and HSSE considerations

COURSE CONTENT
What LNG is and where it comes from • Physical properties of LNG • Vapor-liquid equilibrium behavior of LNG and refrigerants • Gas pre-treatment • Heat exchangers • Refrigeration • Rotating machinery • Liquefaction processes • LNG storage • LNG shipping • LNG importing

2018 Schedule and Tuition (USD)

HOUSTON, US 21-23 AUG  $3105
KUALA LUMPUR, MYS 23-25 APR  $4020
LONDON, UK 26-28 MAR  $3595+VAT
PERTH, AUSTRALIA 13-17 AUG  $5500+GST

2018 Schedule and Tuition (USD)

HOUSTON, US 27-31 AUG  $4140
KUALA LUMPUR, MYS 29 OCT-2 NOV  $5360
LONDON, UK 23-27 APR  $4790+VAT
PERTH, AUSTRALIA 13-17 AUG  $5500+GST

Any course is available inhouse at your location. Contact us today.

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PetroSkills e-Learning

Eliminate travel expenses and accelerate learning!

Online Learning for Gas Processing Operations

This e-learning library provides the fundamentals and in-depth coverage of all topics related to gas processing to help develop a highly qualified workforce to maintain operating efficiency and a safe working facility.

Topics include:
• Introduction to Gas Processing for Operations
• Hydrocarbon Phase Behavior and Vapor-Liquid Equilibrium
• Gas Processing Thermodynamics
• Turboexpander
• Fractionation in Gas Processing
• Solid Bed Adsorption and TEG
• Dehydration
• Amine Sweetening Process
• Gas Processing Hazards

www.petroskills.com/elearning

- Designed for the Global Oil and Gas Industry
- Pre-tests and Post-tests
- Customization for Site Specifics
- Gap Identification and Remediation
- AICC/SCORM Compliant

ePilot™

AICC/SCORM Compliant
This course will be delivered virtually through PetroSkills Academy, providing participants with the knowledge they need at their convenience.

This Process Safety Engineering Principles Blended Program provides an overview of process safety engineering fundamentals for hydrocarbon processing facilities. The focus of this course is on the engineering/design aspects of Process Safety Management. Frequent reference is made to historical incidents and recurring problem areas. Techniques for analyzing and mitigating process safety hazards applicable to oil and gas processing will also be reviewed. This program integrates the concepts covered to achieve a measured approach to Process Safety Engineering.

**COURSE CONTENT**

- Process Safety Risk Analysis and Inherently Safer Design
- Process Hazards Analysis and Layer of Protection analysis techniques
- Leakage and dispersion of hydrocarbons
- Combustion behavior of hydrocarbons
- Sources of ignition and hazardous area classification
- Specific plant systems and equipment
- Relief and flare systems
- Fire protection principles
- Explosion protection
- Thermal property correlations appropriate for various gas processing systems
- Limitations associated with commercial simulation packages and how the results can be quickly checked for relative accuracy

**YOU WILL LEARN**

- How to analyze and assess different types of risk analyses
- How to utilize models that are associated with risk management
- The importance of building safety into processes
- How Inherently Safer Design can be applied and more

**DESIGNED FOR**

Anyone who has to deal with concepts of process safety engineering, including facilities engineers, process engineers, design engineers, new safety/loss engineers, project engineers, operations supervisors, maintenance supervisors, and representatives from insurance companies or regulatory agencies.

**YOU WILL LEARN**

- How to analyze and assess different types of risk analyses
- How to utilize models that are associated with risk management
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**COURSE CONTENT**

- Process Safety Risk Analysis and Inherently Safer Design
- Process Hazards Analysis and Layer of Protection analysis techniques
- Leakage and dispersion of hydrocarbons
- Combustion behavior of hydrocarbons
- Sources of ignition and hazardous area classification
- Specific plant systems and equipment
- Relief and flare systems
- Historical incident databases, plant layout and equipment spacing
- Fire protection systems
- SIS, monitoring and control

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- How to utilize models that are associated with risk management
- The importance of building safety into processes
- How Inherently Safer Design can be applied and more
Introduction to Oil and Gas Production Facilities – PF2

BASIC 3-DAY

The scope of the discussion ranges from an overview of the oil and gas industry, hydrocarbon phase behavior characteristics, and different reservoir types, to product specifications and the processes used to meet these. Other facilities considerations are addressed, such as process safety and downstream processing that may impact the production facility selection and operation.

DESIGNED FOR

Those interested in an overview of production facilities, including subsurface professionals, line managers, sales or business development staff, environmental personnel, operational staff, and those new to the industry.

YOU WILL LEARN

• How the reservoir type, drive mechanism, fluid properties, location, and product specifications influence the selection and design of the production facilities
• How to do quick ‘back of the envelope’ calculations to better understand equipment sizing and capacity
• Parameters that affect the design and specification of oil stabilization and dehydration equipment
• Awareness of the parameters that determine flowline/gathering system capacity
• The purpose of separators in a production facility and familiarity with the typical configurations
• Typical design parameters, operating envelopes, common operating problems of oil and gas production equipment, and the effect of changing feed conditions over the life of a field
• To describe oil dehydration/desalting process options and equipment
• Produced water treating and disposal options for different applications and how they affect production rates and facility throughput
• Gas dehydration process options, with a particular emphasis on glycol dehydration
• The principles of asset integrity and inherently safe design given the rate, composition, temperature, and pressure of the production stream
• About midstream facilities required downstream of the primary production facility to deliver saleable products to the market, and how these facilities are affected by production rates, composition, and production facility performance

COURSE CONTENT

Overview of oil and gas industry • Qualitative phase behavior and reservoirs • Hydrocarbon properties and terminology • Typical sales/disposal specifications • Flowlines, piping and gathering systems • Production separation • Oil processing • Water injection systems (including pumps) • Gas handling – compression, dehydration • Measurement and storage • Other facilities considerations – utilities, process safety • Midstream facilities – gas processing, pipelines, LNG

2018 Schedule and Tuition (USD)

HOUSTON, US 1-3 OCT  $3105

Concept Selection and Specification of Production Facilities in Field Development Projects – PF3

BASIC 5-DAY

This course is similar to Introduction to Oil and Gas Production Facilities (PF-2), but is presented in the context of concept selection and front-end field development planning.

DESIGNED FOR

This course is intended for those working on field development teams, as well as those who need to better understand how surface facilities are selected and how subsurface characteristics affect facility design and specification.

YOU WILL LEARN

• How to develop the project framework and decision making strategy
• How the specification of production/processing facilities is influenced by reservoir type, drive mechanism, fluid properties, location, and contractual obligations
• Operating conditions that affect the specification of the production facilities from the wellhead through initial separation
• Parameters that affect the design and specification of oil stabilization and dehydration equipment
• The design and specification of produced water systems appropriate for the rate and composition of the produced water to meet the required environmental regulations and/or injection well capacity
• The design and specification of gas handling facilities, including compression dehydration and sweetening
• The impact of artificial lift systems and secondary/tertiary production projects on facilities selection and design
• The principles of asset integrity and inherently safe design given the rate, composition, temperature, and pressure of the production stream
• About midstream facilities required downstream of the primary production facility to deliver saleable products to the market, and how these facilities are affected by production rates, composition, and production facility performance

COURSE CONTENT

Reservoir types, fluid properties, and typical product specifications • Flowlines, gathering systems, flow assurance, and production separation • Oil dehydration and stabilization • Produced water treating and water injection systems • Gas handling, including compression, dehydration, and sweetening • The effect of artificial lift systems, and secondary and tertiary recovery projects • Midstream facilities - gas processing, pipelines, product storage, and LNG • Other facility considerations - utility systems, process safety and asset integrity, and environmental regulations

2018 Schedule and Tuition (USD)

HOUSTON, US 23-27 APR  $4140

Oil Production and Processing Facilities – PF4

FOUNDATION 10-DAY

The emphasis of this course is on oil production facilities – from the wellhead, to the delivery of a specification crude oil product, to the refinery. Both onshore and offshore facilities are discussed. Produced water treatment and water injection systems are also covered. Solution gas handling processes and equipment will be discussed at a relatively high level. In addition to the engineering aspects of oil production facilities, practical operating problems will also be covered, including emulsion treatment, sand handling, dealing with wax and asphalt, etc. Exercises requiring calculations are utilized throughout the course. The course intended to complement the G-4 Gas Conditioning and Processing course, focused on the gas handling side of the upstream oil and gas facilities area.

DESIGNED FOR

Process/facilities engineers and senior operating personnel involved with the design and operation of oil and produced water processing facilities.

YOU WILL LEARN

• Well inflow performance and its impact on production/processing facilities
• About oil, gas, and water compositions and properties needed for equipment selection and sizing
• How to select and evaluate processes and equipment used to meet sales or disposal specifications
• To apply physical and thermodynamic property correlations and principles to the design and evaluation of oil production and processing facilities
• How to perform equipment sizing calculations for major production facility separation equipment
• To evaluate processing configurations for different applications
• How to recognize and develop solutions to operating problems in oil/water processing facilities

COURSE CONTENT

• Reservoir traps, rocks, and drive mechanisms
• Phase envelopes and reservoir fluid classification
• Well inflow performance
• Artificial lift
• Gas, oil, and water – composition and properties
• Oil gathering systems
• Gas-liquid separation
• Emulsions
• Oil-water separation
• Oil treating
• Desalting
• Oil stabilization and sweetening
• Oil storage and vapor recovery
• Sand, wax, asphalt, and scale
• Transportation of crude oil
• Produced water treatment
• Water injection systems
• Solution gas handling

2018 Schedule and Tuition (USD)

2018 Schedule and Tuition (USD)

HOUSTON, US 1-27 APR  $5750

HOUSTON, US 23-27 APR  $4140

2018 Schedule and Tuition (USD)

BAKERSFIELD, US 2-13 APR  $6760

DENVER, US 18-29 JUN  $8770

DE threatened with US 9-20 DEC  $8840

HOUSTON, US 12-23 FEB  $8760

DAV); UAE 25-26 NOV-7 DEC  $8760

KUALA LUMPUR, MY 16-27 JUL  $9550

LONDON, UK 5-16 NOV  $6760 +VAT

Any course is available inhouse at your location. Contact us today.
Applied Water Technology in Oil and Gas Production – PF21

FOUNDATION 5-DAY

This course provides an overview of the main water handling systems typically encountered in upstream (E&P) production operations, both onshore and offshore. The chemistry of the main water-related problems of mineral scales, corrosion, bacteria, and oil-water will be reviewed both from the theoretical and practical aspects. Produced water treatment equipment and typical water quality specifications will also be reviewed, as well as water injection and disposal systems. An exercise will be given to identify typical system problems and to apply the knowledge gained to propose solutions. Emphasis will be placed on understanding and resolving operational problems in process equipment.

DEIGNED FOR
Managers, engineers, chemists, and operators needing to understand water-related problems in oil and gas production and their solutions.

YOU WILL LEARN
• The basics of oilfield water chemistry
• How to monitor and control corrosion, scale, and bacterial growth in produced water and water injection/disposal systems
• How to implement system surveillance programs to detect potential problems before system damage occurs
• Produced (oily) water treatment options and related treatment equipment
• How to use the knowledge gained to identify typical system problems and be able to propose solutions

COURSE CONTENT
Water chemistry fundamentals • Water sampling and analysis • Water formed scales • Corrosion control • Water treatment microbiology • Produced water discharged/disposal and treatment principles • Produced water treating equipment - theory of operation, advantages and disadvantages, and the importance of oil droplet size • Water injection and disposal systems - theory of operation, corrosion, scale, and biological control • Case study

2018 Schedule and Tuition (USD)
HOUSTON, US 20-24 AUG $4240
LONDON, UK 5-9 MAR $4890+VAT

2018 Schedule and Tuition (USD)
HOUSTON, US 21-25 MAY $4240

2018 Schedule and Tuition (USD)
HOUSTON, US 8-12 OCT $4340

Fundamental and Practical Aspects of Produced Water Treating – PF23

FOUNDATION 5-DAY

This course covers topics related to Produced Water Treatment in upstream oil and gas operations. Produced water composition and physical properties are covered. Water quality requirements for various disposal methods are addressed, including onshore surface discharge, offshore discharge to sea, and reinjection for disposal or freshwater. Regulatory requirements and analytical methods used to monitor and ensure regulatory compliance are discussed. Treatment technology is presented along with practical considerations for selecting and operating typical water treatment equipment. Representative process flow diagrams illustrate equipment selection, design features, layout, and processes. Chemical treatment options are also considered.

DEIGNED FOR
Managers, engineers, chemists, and senior operations personnel responsible for designing, operating, and maintaining facilities that process and manage produced water. This course will provide participants with an understanding of the technical aspects required to select, design, maintain, and troubleshoot produced water equipment.

YOU WILL LEARN
• How produced water compositions affect water treatment system design and performance
• How to interpret produced water analytical data and calculate common Scale Indices
• How to estimate form and contribute to water treatment challenges
• How Total Suspended Solids (TSS) affects water quality and what to do about it
• What water quality is required for surface or onshore disposal, for injection disposal, or for beneficial use
• The regulatory requirements for offshore water disposal and what is in an NPDES Permit
• What analytical methods actually measure and how to select an appropriate method
• How separators, clarifier tanks, CPIs, hydrocyclones, flotation cells, and bed filtration work and how to improve their performance
• The most common causes of water treating problems and how to diagnose and resolve them
• Typical PFIs used to illustrate operational issues

COURSE CONTENT
Introduction to water treatment technology and issues • Produced water chemistry and characterisation • Defining and characterizing emulsions that impact water quality and treatment • Water quality requirements for injection or surface disposal, NPDES permits, analytical methods • Primary water treatment technologies - separators, hydrocyclones, and CPIs • Secondary water treatment - induced gas flotation • Tertiary water treatment technologies - media and membrane filtration • Chemicals and chemical treatment • Diagnostic testing and in-field observations • Diagnosing and resolving water treatment issues based on actual field experiences

Separation Equipment - Selection and Sizing – PF42

INTERMEDIATE 5-DAY

This course covers the different types of separation equipment typically encountered in oil and gas production facilities. Fractionation equipment and produced water treating equipment are not covered in this course. You will learn where the different types of separation equipment are used based on operating conditions and separation performance requirements. Frequent references will be made to real production facility process flow diagrams (PFDs). Typical operational problems and their solutions will also be discussed. Exercises requiring calculations are utilized throughout the course as well.

Please be aware that due to overlap in content, it is not necessary to take the PF-42 course if you have already taken the PF-4 Oil Production and Processing Facilities course.

DEIGNED FOR
Process/Facilities engineers who need skills for design and troubleshooting of separators.

YOU WILL LEARN
• Different types of separation equipment utilized in the oil and gas industry and where they are used
• Separation performance capabilities of the different types of equipment
• How to size the different types of separation equipment
• How to troubleshoot and debottleneck separation equipment
• How to calculate the wall thickness and estimate the weight of separators
• Instrumentation and controls used on separation equipment

COURSE CONTENT
Fluid properties and phase behavior • Phase separation processes • Gas-liquid separation equipment: slug catchers, conventional separators (horizontal and vertical), scrubbers, compact separators, filter separators/coalescing filters • Separator internals: inlet devices, mist extractors, baffles, etc. • Emulsions • Oil-water separation equipment: conventional 3-phase separators and firewater knockouts, wash tanks • Oil treating and desalting equipment: mainly electrostatic coalescers • Liquid-liquid coalescing filters • Mechanical design aspects: pressure vessel codes, wall thickness and vessel weight estimation, material selection, relief requirements • Operational problems

Relief and Flare Systems – PF44

INTERMEDIATE 5-DAY

This intensive course provides a comprehensive overview of relief and flare systems for oil and gas processing facilities. The course begins with the need for pressure control/overpressure control, continues with the key engineering and design aspects including code considerations, and concludes with selecting and designing the components of a relief and flare system. The material of the course is applicable to onshore field production facilities, pipelines, gas plants, terminals, and offshore production facilities.

DEIGNED FOR
Engineers and senior operating personnel responsible for designing, operating, and maintaining relief and flare systems in oil and gas facilities.

YOU WILL LEARN
• Purposes of relief and flare systems and their importance in safe operations
• Causes of overpressure and the ways to control/mitigate
• Defining the possible relief scenarios
• Commonly used pressure relieving devices, selection and sizing
• Determining set/release pressures to meet operational, safety, and regulatory requirements
• Operational considerations of maintenance, testing, certification, and disposal of fluids
• Designing and operating relief and flare header systems considering fluid characteristics, service conditions, volumes, gas dispersion, and radiation
• Selection and sizing other key components of a relief/flare system

COURSE CONTENT
Overview of typical relief and flare systems and key components • Codes and standards as well as good practices typical in oil and gas facilities • Safety implications and causes of overpressure • Overpressure protection philosophy including source isolation and relief • Determination of relief requirements and defining set point pressures • Types, applications, and sizing of common relief devices • Blow-down/depressurising - purpose and design/operational considerations • Design and specification considerations for relief valves and header systems, including fluid characteristics, services conditions, material selection, and header sizing • Environmental considerations • Radiation calculations and the impact of flare tip design • Selection and sizing of key components: knockout and seal drums, vent/flame stack, vent/flare tips, and flare ignition systems • Defining need and quantity of purge gas • Flare gas recovery, smokeless flaring, and purge gas conservation • Operational and troubleshooting tips

2018 Schedule and Tuition (USD)
HOUSTON, US 24-28 SEP $4340
KUALA LUMPUR, MYS 12-16 NOV $5560
LONDON 10-14 SEP $4990+VAT
PERTH, AUSTRALIA 6-10 AUG $5700+GST

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Onshore Gas Gathering Systems: Design and Operations – PF45

INTERMEDIATE 5-DAY
This course deals with the design, operation, and optimization of onshore gas gathering systems and their associated field facilities, from the wellhead to the central gas processing facility. From a design perspective, the main variables that impact the flexibility and operational characteristics of an onshore gas gathering system will be discussed. Typical operating problems are covered including hydrates, multiphase flow issues, corrosion, declining well deliverability, etc. Exercises will be utilized throughout the course to emphasize the key learning points.

DESIGNED FOR
Production and facilities department engineers/ senior operating personnel responsible for the design, operation and optimization of onshore gas gathering systems and their associated field facilities.

YOU WILL LEARN
- The impact of gathering system pressure on gas well deliverability
- The impact of produced fluids composition on gathering system design and operation
- How to evaluate field facility and gathering system configurations for different applications
- To recognize and develop solutions to operating problems with existing gas gathering systems

COURSE CONTENT
Gas well inflow performance and deliverability • Overview of gas well deliquification methods for low-rate, low pressure gas wells • Effect of gathering system/abandonment pressure on reserves recovery • Impact of produced fluids composition • Sweet/sour • CO2 content • Rich/lean • Produced water • Hydrates and hydrate prevention • Dehydration • Heating • Chemical inhibition • Multiphase flow basics • Corrosion/materials selection • Gathering system layout • Wellsite/field facilities options • Provisions for future compression

 Troubleshooting Oil and Gas Processing Facilities – PF49

INTERMEDIATE 5-DAY
This course will cover how to establish and apply a general troubleshooting methodology as well as how to conduct process/equipment specific troubleshooting. Definitions of good/normal performance will be discussed for each process/equipment type covered. Data gathering, validation and utilization procedures will be discussed. Criteria to be used when evaluating possible problem solutions will also be covered. Real-world exercises will be utilized throughout the class to reinforce the learning objectives. Both onshore and offshore facilities will be discussed. It is assumed that course participants have a solid understanding of how typical oil and gas production and processing facilities work, including the commonly used processes and equipment involved.

DESIGNED FOR
Process/Facilities engineers with 5-10 years of experience, facilities engineering team leaders/supervisors, and senior facilities operational personnel.

YOU WILL LEARN
- The difference between troubleshooting, optimization, and debottlenecking
- How to recognize trouble when it is occurring
- How to develop a methodical approach to troubleshooting
- To recognize how different components of a facility interact with each other, and the significance of these interactions
- How to gather, validate, and utilize the data needed for troubleshooting
- The criteria to be considered for identifying the best solution when several feasible solutions are available
- Typical causes of problems, and their solutions, for the main types of processes and equipment used in the upstream-midstream oil and gas industry

COURSE CONTENT
Troubleshooting methodology fundamentals and data reconciliation • Gas - Liquid separators • Reciprocating compressors • Amine gas sweetening • Glycol dehydation units • 3-phase separators • Centrifugal pumps • Oil treating • Produced water treating systems • Shell and tube heat exchangers • Centrifugal compressors • Molecular sieve dehydration units • NGL recovery processes

CO2 Surface Facilities – PF81

SPECIALIZED 4-DAY

FIELD TRIP
This course emphasizes the effect of carbon dioxide on the selection and operation of equipment (separators, compressors, and dehydrators), as well as sweetening process equipment. This program, first introduced in 1985, assists those working with carbon dioxide or high carbon dioxide content natural gas. This course is particularly applicable to those persons who operate and/or design enhanced oil recovery (EOR) facilities using CO2 as a miscible agent. Physical and thermodynamic property data for carbon dioxide/natural gas mixtures are discussed. Calculations are performed to illustrate principles and techniques. Midland is a four-day session including a CO2 plant tour on Thursday, contingent on plant availability.

DESIGNED FOR
Engineers and senior operating personnel involved with carbon dioxide/natural gas/CO2 EOR systems.

YOU WILL LEARN
- What to expect over the life of a CO2 EOR system
- Impact of CO2 on the design and operation of oil production equipment
- Physical and thermodynamic properties of pure CO2 and the impact of CO2 in hydrocarbon mixtures
- Dehydrate high CO2-content gases
- Best practices to deal with Dense Phase pipelines, metering, flaring etc.
- How to pump and compress CO2
- Using purification processes: membranes, Ryan-Holmes, amines, hot carbonate, etc.

COURSE CONTENT
Overview of CO2 injection and process facilities • Heavy emphasis on CO2 for enhanced oil recovery • Physical and thermodynamic properties of CO2 and high CO2 mixtures • Materials selection and design consideration in CO2 systems • Process vessel specification • Pumps and compressors • Fluid flow and special pipeline design considerations such as the control of ductile fractures • Dehydration of CO2 and CO2-rich gases • General overview of processes to treat/recover CO2

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Instrumentation, Controls and Electrical Systems for Facilities Engineers — ICE21

FOUNDER 5-DAY

This foundation-level course provides an introduction and overview of electrical systems, instrumentation, process control, and control/ safety systems typically encountered in oil and gas facilities. The course is designed to understand terminology, concepts, typical equipment configurations, and common pitfalls in order to improve communication with electrical and I&C professionals. This course covers similar content to ICE3 and ICE3 courses, but at a more conceptual level. This course is not a prerequisite for taking E3 or IC3, but rather a replacement for those that are not able to take both E3 and IC3.

DESIGNED FOR
Process, chemical, and mechanical engineers, (i.e. non-instrumentation and non-electrical disciplines) as well as other technical and non-technical professionals with little or no background in I&C systems. Electrical and Instrumentation Engineers should consider E3 and IC3 for more in-depth coverage.

YOU WILL LEARN
- Fundamentals of electricity, such as voltage, current, resistance, power factor, and single- and three-phase power systems
- Electrical specifications, such as voltage selection, load lists, and power
- How to read one-line diagrams and understand the function of the components of power distribution, including transformers, switchgear, MCCs, VFDs, and power distribution
- The function and considerations of infrastructure components, such as cable, conduit, cable tray, and duct banks
- Awareness of the concepts behind classification of hazardous locations and equipment specifications
- Safety risks and mitigation strategies for power systems, including short circuit and overcurrent protection, ground faults, shock hazards, and arc flash
- Fundamentals of control systems, sensors, controllers, and final elements
- Key requirements for instrument specifications such as accuracy, signal selection, process conditions, material compatibility, installation considerations, capabilities and limits, and relative cost
- Basics of specification of shutdown and control valves
- Control system functions, limitations, and architectures, including PLC, DCS, SIS, RTU, and SCADA; common networking systems, including Ethernet, Modbus and Fieldbus
- Exposure to the typical documentation and drawings necessary for the design, specification, installation, operation and maintenance of electrical, instrumentation and control systems

COURSE CONTENT
Fundamentals of electricity • Power distribution and motor control systems for oil and gas applications • Electrical instrumentation systems • Hazardous area classification for oil and gas applications • and more...

Electrical Engineering Fundamentals for Facilities Engineers — E3

FOUNDER 5-DAY

This course applies fundamental electrical engineering principles to oil and gas facilities. The course is designed for Facilities Engineers who interface with electrical systems, and provides practical insight and development of new Facilities Electrical Engineers. Through the use of individual and group problem solving, attendees will learn about power transformers, motors, generators, one-line diagram interpretation, protection and coordination of electrical equipment, site and standby generation, electrical safety, and hazardous areas identification. Participants will gain a better understanding of electrical power systems in oil and gas facilities. This course is a more in-depth version of the content of ICE21 and ICE21 is not a prerequisite for taking this course.

DESIGNED FOR
Those facilities personnel who interface with facility electrical power systems, including project engineers, operation leads, instrumentation, controls personnel, and electrical engineers who are new to electrical power systems within oil and gas facilities.

YOU WILL LEARN
- Fundamental concepts of electricity including voltage, current, resistance, power, inductance, capacitance, and power factor
- The key components of facilities electric power distribution, which include circuit arrangements, low and medium voltage switchgear, and single- and three-phase power distribution
- Transformer operation, components, turns and voltage ratios, losses, efficiency, rating, and connections
- The difference between direct current, induction and synchronous current motors, motor enclosures, and how to select, start, protect, and control motors
- The principles of protecting electrical equipment including time current curves, fuses, circuit breakers, and coordination
- The purposes and sizing criteria for backup power, including generators and UPS power systems
- The considerations and sizing criteria for on-site power generation, which includes standby, prime, peak, and co-generation
- What grounding and bonding systems are, with an overview of ignition sources, shock protection, separately derived systems, and substation grounding
- The concepts, terminology and application of hazardous area classification standards, equipment protection methods, and installation requirements for NEC and IEC projects

COURSE CONTENT
Fundamentals of insulation and conduction • Direct current, alternating current • Transformers power and instrument • Motors induction and synchronous • Power distribution • System protection and coordination • Standby power systems • Power generation • Variable speed drive systems • Grounding, bonding, and electrical safety • Hazardous area identification

Instrumentation and Controls Fundamentals for Facilities Engineers — IC3

FOUNDER 5-DAY

This course applies fundamental instrumentation and control engineering principles to oil and gas facilities design and operation, and is designed to accelerate the development of new Facilities Instrumentation and Control Engineers. Through the use of individual and group problem solving, attendees will learn about field measurement devices, final elements and actuators, pressure relief and regulation, documentation, programmable logic controls, power supplies, SCADA, DCS, SIS, hazardous areas, and installation methods. This course is a more in-depth version of the content of ICE-21 and ICE21 is not a prerequisite for taking this course.

DESIGNED FOR
Facilities and Project Engineers as well as newly graduated Electrical, Controls and Instrument engineers (0-5 yrs.), with a need to gain basic understanding of Instrumentation and control systems within oil and gas facilities.

YOU WILL LEARN
- Operating principals and specification criteria for field measurement devices including level, pressure, temperature, and flow
- Final elements and actuators including control loops, control valves, shutdown valves, actuators, and transducers
- P&ID symbols and instrument tags, loop and logic diagrams, pitfalls and best practices, ISA symbology, and coding of instrument and I/O lists
- Signal types and wiring requirements for analog/digital inputs and outputs as well as other signals such as thermocouple, RTD, pulse, and digital communications
- Typical control system functions, limitations, and architectures for PLC and DCS systems including programming methods such as ladder logic and function block
- Process control basics with an emphasis on control loops, types, and configurations for on-line oil and gas process control applications such as separators, pumps, distillation towers, filters, contactors, compressors, heat exchangers, and fired heaters
- Understanding of the PID algorithm, loop tuning, and advanced process control techniques such as feed forward, cascade, selective, and ratio control
- Supervisory Control and Data Acquisition (SCADA) Systems to include telemetry, RTUs, internet, and web based communications
- Common networking systems including Ethernet, Modbus, and Fieldbus
- Risk mitigation, technologies, and architecture of Safety Instrumented Systems (SIS)
- The concepts, terminology, and application of hazardous area classification standards, equipment protection methods, and installation requirements for NEC and IEC projects

COURSE CONTENT
Fundamentals of control signals and wiring • Control system basics • and more...

2018 Schedule and Tuition (USD)

<table>
<thead>
<tr>
<th>Location</th>
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2018 Schedule and Tuition (USD)

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Any course is available inhouse at your location. Contact us today.
**Intermittent Valve Analysis** – IC72

**Intermediate 5-Day**

This workshop provides a detailed in-depth insight into valve and actuator technology, covering: control valves, check valves, shut-off valves, solenoid valves, and pressure relief valves. A methodology is presented to ensure the optimum selection of size, choice of body and trim materials, components, and ancillaries. This includes linear and non-linear processes and signature analysis. Throughout the workshop, participants will learn through active participation using exercises, questionnaires, and practical sessions covering: systems choice, basic sizing calculations, computer-based sizing, and maintenance diagnostics.

**Research Scope**

- Facilities, chemical, electrical, instrumentation, maintenance, and mechanical engineers and technicians involved in designing, selecting, sizing, specifying, installing, testing, operating, and maintaining control valve systems.

**You Will Learn To**

- Compare the major technologies used in the final control element.
- Calculate the valve flow coefficient Cv.
- Perform flow and system pressure head loss calculations.
- Contrast different types of control, shut-off, and check valves.
- Describe the principles of cavitation control and noise reduction.
- Select optimum materials of construction to avoid corrosion and erosion.
- Identify the correct requirements for trim selection.
- Differentiate between inherent and installed characteristics.
- Identify ANSI/DIN pipe sizes and pressure ratings.
- Explain the control valve seat leakage classification.
- Evaluate the optimum valve actuator combination.
- Apply on-line valve testing and diagnostics for deadband and hysteresis, stick-slip, and non-linearity.
- Examine the principles of preventive maintenance through the application of signature analysis.
- Perform a bench set and calculate actuator spring wind-up.
- Pick the correct positioner using our set of guidelines.

**Course Content**

- Fluid mechanics.
- Flowmeter classification.
- Uncertainty analysis.
- Flow measurement.
- Turbine.
- Positive displacement.
- Ultrasonic flowmeters.
- Coriolis mass flowmeters.
- Level measurement.
- Ultrasonic level.
- Hydrostatic pressure.
- Ultrasonic measurement.
- Radar measurement.
- Flow calibration.
- Terminal extension.
- Control actuator transfer.
- Control system transfer.
- Pipeline considerations.
- Fugitive emissions.
- Leak detection.
- Real time transient model.
- Loss control systems.
- Control valve positioning.
- Monitoring and controlling production losses.
- Physical leaks.
- Meter proven performance.
- API standards.
- Measuring the suspended S&W content.
- Calculating net volume.
- Flowmeter selection and costs.
- Initial considerations.
- Meter selection.
- Properties and measurement of NGL, LNG, and LPG.

**Flow and Level Custody Measurement** – IC73

**Intermediate 5-Day**

This course is designed to acquaint users with the problems and solutions for high accuracy transfer of liquid and gas petroleum products from supplier to customer. These needs have been brought about by major changes in manufacturing processes and because of several dramatic and dramatic changes such as: the increase in cost of fuel and raw materials, the need to minimize pollution, and the increasing pressures being brought to bear to adhere to the requirements for health and safety.

**Research Scope**

- This workshop is specifically tailored for any personnel who are, or will be, responsible for designing, selecting, sizing, specifying, installing, testing, operating, and maintaining control valve systems. This includes facilities, process, chemical, electrical, instrumentation, maintenance, and mechanical engineers and technicians.

**You Will Learn To**

- Recall the basics of fluid mechanics.
- Identify the fundamental problems related to uncertainty.
- Compare the different methods of measuring flow in liquids and gas industries.
- Describe the various methods of level measurement.
- Compare the different methods used to derive separation tables.
- Evaluate the various custody transfer standards used in industry.
- Contrast the methods used in flow calibration.
- Identify the different types of proven systems.
- Explain the methodology used in custody transfer.
- Examine the challenges relating to pipelines.
- Describe the basics of leak detection.
- Analyze the methodology for monitoring and controlling production losses.
- Evaluate and compare the problems and solutions associated with the measurement of NGL, LNG, and LPG.

**Course Content**

- Fluid mechanics.
- Flowmeter classification.
- Uncertainty analysis.
- Flow measurement.
- Turbine.
- Positive displacement.
- Ultrasonic flowmeters.
- Coriolis mass flowmeters.
- Level measurement.
- Ultrasonic level.
- Hydrostatic pressure.
- Ultrasonic measurement.
- Radar measurement.
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- Terminal extension.
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- Measuring the suspended S&W content.
- Calculating net volume.
- Flowmeter selection and costs.
- Initial considerations.
- Meter selection.
- Properties and measurement of NGL, LNG, and LPG.

**Practical PID Control and Loop Tuning** – IC74

**Intermediate 5-Day**

This workshop provides instrumentation, automation, and process engineers and technicians with the basic theoretical and practical understanding of regulatory control systems and how this can be applied to optimize process control in terms of quality, safety, flexibility, and costs. Centered on the ISA-recommended PC-Control LAB simulator, participants will learn through active participation using exercises, questionnaires, and a series of 16 practical simulation sessions covering: process reaction; tuning methods; diagnostic tools; effect of different algorithms; surge tank level control; analysis of such problems as valve hysteresis, stick and non-linearities, and the impact on controllability; and integral windup.

**Research Scope**

- Level instrumentation, automation, and process engineers and technicians involved in specifying, installing, testing, tuning, operating, and maintaining regulatory PID control systems.

**You Will Learn To**

- Describe such terms as process lag, capacity, and resistance.
- Explain the significance of the process reaction curve.
- Identify the effects of filtering on loop performance.
- Distinguish the effect of span on the system performance.
- Analyze such problems as valve hysteresis, stick, and non-linearities.
- Evaluate the effects of proportional, integral, and derivative control.
- Correctly apply both open and closed Loop Tuning according to Ziegler-Nichols.
- Apply “as found” tuning.
- Estimate the effects on loop tuning using a software-based loop analysis program.
- Describe both cascade and feedforward control.
- Explain split range control.
- Identify and correct problems due to process dead time.
- Discuss the top 20 mistakes made in the field of process control.

**Course Content**

- Basic process considerations.
- Process lag, capacitance, and resistance.
- Process reaction curve.
- 1st and 2nd order reaction.
- Instrumentation and controls.
- Tuning according to Ziegler-Nichols.
- Effect of span.
- Inherent and installed valve characteristics.
- Actuators.
- Valve positioners.
- Testing procedures and analysis.
- On/off control.
- Proportional control.
- Proportional offset.
- Reset.
- Integral action and windup.
- Stability.
- Derivative action.
- PID control.
- Control algorithms.
- Load disturbances and offset.
- Speed, stability, and robustness.
- Open loop reaction curve tuning method.
- Ziegler-Nichols.
- Final and typical settings.
- Closed loop continuous cycling tuning method.
- Ziegler-Nichols.
- Fine tuning.
- “As found” tuning.
- Surge tuning.
- Split/parallel range control.
- Cascade systems.
- Feed-forward and combined systems.
- Ratio control.
- System integration.

**2018 Schedule and Tuition (USD)**

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*plus computer charge*

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p PetroSkills.com/ccc

**2018 Schedule and Tuition (USD)**

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<tr>
<td>HOUSTON, US</td>
<td>3-7 DEC</td>
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*plus computer charge*
Corrosion Management in Production/Processing Operations – PF22

FOUNDERATION 5-DAY

This course will cover the main causes of corrosion in upstream oil and gas operations, as well as monitoring and mitigation methods. The various corrosion mechanisms give rise to a number of different forms of corrosion damage, which will all be considered. Participants will estimate the corrosivity of a given environment through analysis of the chemical and physical characteristics of the system; review approaches to selecting materials and coatings for corrosion resistance for different conditions and applications (including the use of NACE MR0175/ISO 15161); and be introduced to cathodic protection (CP) surveys, selecting the CP system type, estimating current requirements, and the design principles of simple cathodic protection systems. The participant will learn how to select and utilize corrosion inhibitors for different systems, and how to select and apply corrosion monitoring techniques to create an integrated monitoring program. The course content is based on a field facilities engineering point of view, as opposed to a more narrowly-specialized corrosion engineering or chemistry viewpoint. It provides an appropriate balance of necessary theory and practical applications to solve/mitigate corrosion-related problems.

DESIGNED FOR
Managers, engineers, chemists, and operators who need to understand corrosion and its control management in oil and gas production and processing.

YOU WILL LEARN
• The basics of corrosion chemistry
• The main corrosion mechanisms occurring in oil and gas production/processing systems
• The different types of damage caused by corrosion
• Materials selection for corrosion prevention
• Some methods for conducting cathodic protection (CP) surveys
• Items to consider in corrosion inhibitor selection
• Key advantages and disadvantages of the various corrosion monitoring methods
• Where the main locations of corrosion concern occur within oil production systems, gas processing facilities (including amine units), and water injection systems

COURSE CONTENT
Fundamentals of corrosion theory • Major causes of corrosion (O, CO2, H2S, microbiologically influenced corrosion) • Forms of corrosion damage • Materials selection • Protective coatings and linings • Cathodic protection • Corrosion inhibitors • Corrosion monitoring and inspection • Corrosion in gas processing facilities • Corrosion in water injection systems • Corrosion management strategy and life-cycle costs

2018 Schedule and Tuition (USD)

HOUSTON, US 9-13 APR $4240
20-24 AUG $4560
KUALA LUMPUR, MYS 29 OCT-2 NOV $4890+VAT
LONDON, UK 12-16 MAR $4150
MIDLAND, US 6-10 AUG $4180
THE HAGUE, NETHERLANDS 3-7 DEC $4555

Piping Systems - Mechanical Design and Specification – ME41

INTERMEDIATE 5-DAY

This 5-day, intermediate level course for engineers and piping system designers reviews the key areas associated with the design of piping systems for oil and gas facilities. The course is focused on four areas: codes and standards, pipe materials and manufacture, piping components, and piping layout and design. Applicable piping codes for oil and gas facilities (ISO, B31.3, B31.4, B31.8, etc.), pipe sizing calculations, pipe installation, and materials selection are an integral part of the course. The emphasis is on proper material selection and specification of piping systems.

DESIGNED FOR
This PetroSkills training course is ideal for mechanical, facilities, plant, or pipeline engineers and piping system designers who are involved in the design of in-plant piping systems for oil and gas facilities.

YOU WILL LEARN
• To apply piping system codes and standards
• About line sizing and layout of piping systems in various types of facilities
• How to specify proper components for process and utility applications
• To compare alternative materials of construction
• The process of steelmaking, pipe manufacturing, and material specifications
• Joining methods and inspection techniques
• Key considerations for flare and vent systems, including FSS sizing

COURSE CONTENT
Piping codes and standards (ANSI/ASME, API, ISO) • Pipe materials and manufacture • Basic pipe stress analysis methods • Valves and actuators • Welding and non-destructive testing • Line sizing basics (single-phase and multiphase flow) • Pipe and valve material selection • Piping layout and design • Manifolds, headers, and flare/vent systems • Non-metallic piping systems • Operations and maintenance considerations of facilities and pipelines

Mechanical Specification of Pressure Vessels and Heat Exchangers – ME43

INTERMEDIATE 5-DAY

FIELD TRIP

This 5-day, intermediate level course for facility engineers and project engineers reviews the key areas associated with the mechanical design of pressure vessels and heat exchangers for oil and gas facilities. The course is focused on vessels, heat exchangers built in accordance to ASME VIII Div 1, considering material selection, key design calculations, and manufacturing processes. The course is not aimed at process engineers designing equipment (FP-42 covers this element), although a brief review of the sizing correlations is included. The course is delivered from the perspective of a vessel fabricator to better understand the dos and don’ts of ideal mechanical specification of pressurized equipment by owner/operators, in order to optimize material utilization and minimize construction costs. The Houston session features an afternoon field trip to a large pressure vessel fabricator.

DESIGNED FOR
Mechanical, facilities, construction, or project engineers and plant piping/valve designers who are involved in the specification and purchasing of pressure vessels, heat exchangers, and other pressure-containing equipment for oil and gas facilities.

YOU WILL LEARN
• About ASME B&PV code and the commonly used sections relevant to oil and gas equipment
• To specify correct and commonly used materials according to ASME II
• How to design vessel shells, heads, nozzles, and heat exchanger details
• How to provide accurate equipment specification documents and review documentation for code compliance
• Key fabrication processes used in the workshop and how to simplify construction through correct vessel specification
• About welding processes and inspection requirements per ASME IX

COURSE CONTENT
Vessel codes and standards (ASME B&PV Code, TEMA, API) • Vessel material selection, corrosion mechanism, heat treatment, and basic metallurgy • Essential design calculations for vessels and heat exchangers • Welding process overview and inspection requirements • Constructability and operability considerations • Vessel integrity, evaluation, and re-purposing of pressure-containing equipment according to API/ASME

Fundamentals of Pump and Compressor Systems – ME44

INTERMEDIATE 5-DAY

This is an intensive 5-day course providing a comprehensive overview of pumps and compressor systems. The focus is on equipment selection; type, unit, and station configuration; and integration of these units in the process scheme and control strategy in upstream and midstream oil and gas facilities. The material of the course is applicable to field production facilities, pipelines, gas plants, and offshore systems.

DESIGNED FOR
Engineers, senior technicians, and system operators designing, operating, and maintaining pump and compressor systems in oil and gas facilities.

YOU WILL LEARN
• Selecting the appropriate integrated pump and compressors units (drivers, pumps, compressors, and auxiliary systems)
• Integrating the pump or compressor units with the upstream and downstream piping and process equipment
• Evaluating pump and compressor units and their drivers in multiple train configurations, parallel and series
• Identifying the key local and remote control elements of pumps and compressors as well as their drivers
• Defining the major life-cycle events, such as changes in flows, fluid composition, and operating conditions that can affect equipment selection and operating strategies
• Assessing the key pump hydraulics and compressor thermodynamics, and their effect on selection and operation
• Identifying significant operating conditioning monitoring parameters and troubleshooting techniques

COURSE CONTENT
Types of pumps, compressors, and drivers, and their common applications and range of operations • Evaluation and selection of pumps and compressors, and their drivers for long-term efficient operations • Unit and station configuration including multiple trains in series and/ or parallel operations • Integration with upstream and downstream process equipment, local and remote control systems, and facilities utilities • Key auxiliary systems including monitoring equipment, heat exchangers, lube and seal systems, and fuel/power systems • Major design, installation, operating, troubleshooting, and maintenance considerations

2018 Schedule and Tuition (USD)

HOUSTON, US 17-21 SEP $4515
† includes field trip

2018 Schedule and Tuition (USD)

BRISBANE, AUSTRALIA 3-7 DEC $5700+GST
DENVER, US 16-20 JUL $4340
DUBAI, UAE 4-8 NOV $5440
HOUSTON, US 10-14 DEC $4340
LONDON, UK 23-27 JUL $4990+VAT
MIDLAND, US 20-24 AUG $4290

2018 Schedule and Tuition (USD)

DEERHOEF, US 23-27 JUL $4340
DUBAI, UAE 11-15 AUG $5440
HOUSTON, US 1-5 OCT $4340
KUALA LUMPUR, MYS 30 JUL-3 AUG $4995+VAT
LONDON, UK 3-7 DEC $4200
PITTSBURGH, US 23-27 APR $4340

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**Compressor Systems - Mechanical Design and Specification - ME46**

**SPECIALIZED 5-DAY**

This 5-day, specialized level course is for facility design engineers, operations engineers, and technicians seeking an in-depth understanding of centrifugal, reciprocating, and screw compressors. This course provides basic knowledge of compressor types and associated auxiliary systems, mechanical design of equipment, operating and performance characteristics, control and monitoring systems, maintenance practices, and codes and standards.

**DESIGNED FOR**
Mechanical, facilities, plant, or pipeline engineers and technicians needing an in-depth understanding of the different types of compressors.

**YOU WILL LEARN**
- How to apply thermodynamics to compressor performance and operating characteristics
- How to size, specify, and select compressors
- Compressor auxiliary systems
- Series and parallel application of compressors
- How to integrate compressor systems into process facilities used in the oil and gas industry
- How to use state-of-the-art monitor and control devices in the operation, maintenance, and troubleshooting of compression systems
- How to apply maintenance practices to improve compressor reliability
- Shop and field performance testing
- Compressor economics including OPEX vs. CAPEX considerations

**COURSE CONTENT**
Types and application of compressors • Selection criteria of dynamic and positive displacement compressors • Compressor thermodynamics and operating characteristics • Performance curves and off-design evaluations • Key compressor components and other auxiliary systems • Equipment specifications • Compressor controls and monitoring devices • Driver and gear involvement • Installation, operation, maintenance practices, and troubleshooting • Economic considerations

**Process Plant Reliability and Maintenance Strategies - REL5**

**INTERMEDIATE 5-DAY**

This course is designed to teach reliability engineering skills as they apply to improving process system reliability and developing maintenance strategies. You will use modern software and analysis methods to perform statistical analysis of failures and model system performance, plus develop maintenance and reengineering strategies to improve overall performance.

**DESIGNED FOR**
Maintenance, engineering, and operations personnel involved in improving reliability, availability, condition monitoring, and maintainability of process equipment and systems. Participants should have foundation skills in statistical analysis and reliability techniques for equipment.

**YOU WILL LEARN**
- Improving reliability in new facilities/systems
- Reliability design for maintainability
- Developing initial maintenance strategies
- Virtual equipment walk-down: criticality using simulation and modeling; developing baseline condition monitoring programs; developing lubrication programs; and developing process-specific maintenance strategies with reliability-centered maintenance (RCM)
- Improving reliability in existing facilities/systems
- Analyzing process reliability plots to determine the amount of opportunity
- Continuous improvement through failure reporting, analysis, and corrective action systems (FRACAS)
- Developing policies and procedures; developing failure reporting codes; statistical analysis of failures using Weibull; and developing root cause analysis (RCA) programs (triggers for RCA and analyzing recommendations)
- Developing maintenance strategies with condition monitoring
- Identifying applicable condition monitoring methods; using criticality to determine level of condition monitoring application; and reporting asset health
- Developing maintenance strategies with RCM
- Developing policies and procedures; identifying systems for analysis; analyzing recommendations with simulation and modeling; and implementing recommendations
- Monitoring results
- Understanding the true purpose of key performance indicators (KPIs)
- Developing appropriate reliability and maintainability KPIs

**COURSE CONTENT**
Criticality analysis • Availability simulation and modeling • Statistical analysis of failures using Weibull • Maintenance strategy development; condition monitoring; reliability-centered maintenance; and essential care • Process reliability analysis • Root cause analysis • Failure reporting; analysis, and corrective action systems • Key performance indicators • Reliability definitions

2018 Schedule and Tuition (USD)

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Onshore Pipeline Facilities - Design, Construction and Operations – PL42

FOUNDATION 5-DAY

Successful onshore pipeline businesses require personnel competent in fully integrated approaches to evaluation, planning, design, construction, operation, and asset integrity management. This intensive, 5-day foundation level course explores best practices for developing and maintaining pipeline systems that maximize life cycle reliability; employee, public, and environmental safety, and cost effectiveness. Design and team exercises are an integral part of this course.

DESIGNED FOR
Pipeline project managers and engineers, operations and maintenance supervisors, regulatory compliance personnel, and other technical professionals with 1-3 years of experience in natural gas, crude oil, refined petroleum products, LPGs, NGL, chemical, carbon dioxide pipeline engineering, construction, operations, or maintenance. This course is intended for participants needing a broad understanding of the planning, development, construction, start-up, and operating and asset integrity management of onshore pipelines.

YOU WILL LEARN HOW TO
• Apply regulatory codes, standards, and industry guidelines (API and others) that control and guide the permitting, design, construction, operation, and maintenance of pipeline facilities
• Apply mechanical and physical principles to pipeline design, hydraulics, and material selection
• Apply mechanical and physical principles to pump and compressor selection
• Describe the important factors in station design
• Describe the importance of route selection and hydraulics for long term profitability, reliability, and safety
• Identify special design and construction challenges of onshore pipeline systems
• Describe methods of river and road crossings, HDD crossings, bores
• Identify the principle interfaces and potential interrelationships of pipeline facilities, such as pump stations and terminals, on design and operations
• Apply operational and maintenance tools and procedures, including system monitoring and control, leak detection, corrosion control, custody measurement and quality control, asset integrity management, and emergency response planning

COURSE CONTENT
Regulations and code compliance requirements • Pipeline survey and routing • Mechanical and hydraulic design • Proper system sizing and design • Overview of design selection criteria • Facilities site and design concerns • Construction methods and contracting approaches • Operations and asset integrity management

2018 Schedule and Tuition (USD)

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<td>KUALA LUMPUR, MYS</td>
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Offshore Pipeline Design and Construction – PL43

FOUNDATION 5-DAY

This intensive five-day foundation level course covers the principal aspects of design, construction, and operations of offshore pipeline systems. The course focuses on pipeline mechanical, structural, and stability design, and construction. Special challenges, such as shoreline crossings, foreign pipeline crossings, repair methods, flow assurance, corrosion control and cathodic protection are an integral part of this course. Participants will acquire the essential knowledge and skills to design, construct, and operate pipelines. Design problems and team projects are part of this course.

DESIGNED FOR
Engineers, designers and operators who are actively involved in the design, specification, construction, and operation of offshore pipeline systems.

YOU WILL LEARN HOW TO
• Apply mechanical, structural, and physical principles to offshore pipeline design, material selection, construction, and operation
• Describe the key construction methods
• Define the importance of environmental conditions, construction methods, and pipelines system hydraulics in design, installation, and operations of offshore pipeline systems
• Identify design and construction challenges of offshore pipeline systems
• Incorporate construction methods into the design of a pipeline system
• Identify the principal interfaces of pipeline facilities, such as platforms, floating production systems, sub-sea wellheads, and SPAs on design, construction, and operations of offshore pipeline systems
• Identify offshore safety and environmental practices and their effect on design, construction, and operations

COURSE CONTENT
Overview of oil and gas transportation systems • Review pipeline hydraulics, focusing on those aspects most affect design, construction, and operations • Pipeline systems definition, survey, and route selection • Safety, environmental, and regulatory considerations, focusing on Codes and Standards related to pipelines • Pipeline conceptual and mechanical design for strength, stability, and constructibility • Pipeline materials and components selection including line pipe, corrosion and cathodic protection, and coatings • Specialized equipment and materials for integration of subsea wellhead manifold systems, side taps, insulation, and pipe-in-pipe will be reviewed • Special design and construction considerations for risers and umbilicals, foreign pipeline crossings, single point mooring platforms, and onshore approaches • Introduction to flow assurance considerations and Pipeline operations, maintenance, and repair considerations and their impact on design and material selection

2018 Schedule and Tuition (USD)

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<td>KUALA LUMPUR, MYS</td>
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Terminals and Storage Facilities – PL44

FOUNDATION 5-DAY

This 5-day foundation level course reviews key issues associated with development, design, construction, and operation of terminals and storage facilities for liquid hydrocarbons and NGLs. The course includes, on silos, 1) terminal codes and siting constraints, 2) terminal design and equipment layout, 3) types of storage and selection criteria, 4) design considerations for loading racks, fire protection, vapor recovery, blending equipment, and water treatment, 5) detailed design of storage tanks, vessels, and caverns, and 6) operations and maintenance. Safety, quality control, system reliability, availability, and regulatory compliance are integrated throughout the course. Case studies and team exercises are used to reinforce key points.

DESIGNED FOR
Project managers, engineers, operations and maintenance supervisors, and regulatory compliance personnel with 1-3 years of experience in planning, engineering, constructing and/or operating terminals and storage facilities offshore including: Design, construction, and operation of offshore terminals.

YOU WILL LEARN
• Storage and terminals basics for hydrocarbon liquids, NGLs, and petrochemical feedstocks • Design and operation of atmospheric storage tanks and pressurized bullets and spheres • Fundamentals of underground storage (salt and rock caverns) • Safety, product quality, and reliability/availability concerns

COURSE CONTENT
Sizing criteria and economics for storage and terminal facilities • Various storage types (atmospheric storage tanks, pressure vessels, salt or rock caverns) and appropriate terminal codes and siting constraints, 2) terminal • Types of storage facilities. • Various storage types (atmospheric storage tanks, pressure vessels, salt or rock caverns) and appropriate terminal codes and siting constraints, 2) terminal • Types of storage facilities. • Various storage types (atmospheric storage tanks, pressure vessels, salt or rock caverns) and appropriate terminal codes and siting constraints, 2) terminal • Types of storage facilities. • Various storage types (atmospheric storage tanks, pressure vessels, salt or rock caverns) and appropriate terminal codes and siting constraints, 2) terminal • Types of storage facilities. • Various storage types (atmospheric storage tanks, pressure vessels, salt or rock caverns) and appropriate terminal codes and siting constraints, 2) terminal • Types of 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Overview of Offshore Systems – OS21

BASIC 5-DAY

This five-day course will accelerate the learning and productivity of individuals with little to no experience working in the offshore oil and gas industry. The course provides an overview of field development concepts and explains how offshore structures and facilities function as integrated systems. The content includes the full range of water depths from shallow water to ultra-deepwater. All major components required for offshore developments such as fixed and floating platforms, drilling and workover rigs, pipelines, risers, process and utilities and construction equipment are discussed. The importance of life-cycle considerations during development planning is emphasized. Individual and group exercises, including a case study, are used throughout the course. The course instructors are experienced offshore managers.

DESIGNED FOR
Technical staff, business professionals, technicians, analysts and other non-technical staff who are involved but have limited experience, or will be involved, with offshore oil and gas facilities. The course provides a basic understanding of offshore systems in all water depths, from shallow to ultra-deepwater, including design, construction, and operations.

YOU WILL LEARN HOW TO
• Identify the key steps in the development of offshore fields from discovery through decommissioning
• Understand the elements of field architecture to define a workable field development
• Recognize key stakeholder issues
• Recognize offshore production facilities and structures, fixed and floating.
• Understand the impact of the ocean environment on facilities design and operations
• Identify major design, construction, and operational issues and interfaces of offshore systems
• Recognize important forces on offshore structures and their influence on design and cost
• Understand strategic options for well drilling (construction) and servicing
• Appreciate the basic processes and equipment involved in the topsides design and operation
• Understand fluid transportation options and equipment
• Recognize the marine equipment used in the construction of offshore facilities
• Understand basic issues in life-cycle and decommissioning decisions
• Appreciate advances in offshore technology

COURSE CONTENT
Field development concepts, fixed and floating • Subsea systems • Wells, construction and servicing • Topsides facilities; processing; utilities • Oil and gas transportation systems; design and installation • Production operations • Offshore construction; equipment • Fabrication; transportation; integration; installation project management • Life-cycle considerations, including decommissioning

Overview of Subsea Systems – SS2

BASIC 5-DAY

An overview of subsea components and how they are integrated into field architecture is provided during this five-day course. Individuals will develop a basic understanding of the various subsea components used in all water depths, from relatively shallow to ultra-deepwater. The participants will all learn how the components are integrated into subsea field developments, which will accelerate learning and productivity. Installation and flow assurance are emphasized as key drivers in subsea design. The course emphasizes a systems approach to design. Individual and group exercises are used throughout the course, including a case study to develop field architecture recommendations, basic component selection, and high level project execution plans for a subsea development. Course instructors are experienced offshore managers.

DESIGNED FOR
Technical staff who are beginning or transitioning into the design, construction, and operation of subsea systems. Non-technical staff working with a subsea development team will benefit by developing an awareness of subsea systems.

YOU WILL LEARN HOW TO
• Recognize the integrated nature of field architecture, system design, and component selection
• Identify appropriate applications for subsea systems
• Identify the main subsea components; their functions, strengths, weaknesses, and interfaces from the well to the production facility
• Understand key design, construction, and installation issues
• Describe basic operating and maintenance considerations
• Understand the key steps, from drilling through startup, for the design, fabrication, testing, installation, and operation
• Understand the importance of an integrated approach to design, flow assurance, installation, and life-cycle considerations

COURSE CONTENT
Applications for subsea systems • Flow assurance considerations in system design and configuration • Field architecture considerations • Subsea component descriptions and functions • Fabrication, testing, installation, commissioning, and operational issues • Production, maintenance, and repair considerations

Fundamentals of Offshore Systems Design and Construction – OS4

FOUNDATION 10-DAY

This 10-day course provides a fundamental understanding of the technology and work processes used for the design and construction of all types of offshore systems, including considerations of development, surveillance, and management. The content includes the full range of water depths from shallow water to ultra-deepwater and will also address life-cycle considerations in all phases of offshore field development and operation. All major components required for offshore developments, such as fixed and floating platforms, drilling rigs, workover equipment, pipelines, risers, process, and utilities and construction equipment are discussed. Each day is placed on the multi-discipline team approach to need to manage the myriad interfaces of offshore facility design, construction, and operations. Individual and group exercises are used throughout the course. A case study for an offshore project development is included.

DESIGNED FOR
Individuals with a basic awareness of or experience in engineering and operations. Technical staff, project engineers, engineering discipline leads, engineering specialists, and operating staff find this course accelerates their capability to contribute on-offshore field development planning, design, and construction projects and field operations.

YOU WILL LEARN HOW TO
• Identify the key facilities parameters that must be evaluated for field development
• Recognize the best applications and characteristics of each type of offshore fixed and floating structure
• Account for the effects of the ocean environment on facilities design, construction, and operations
• Identify the impact space, loads and forces have on the structural design and global performance of offshore structures and how they influence their cost
• Describe the impact topside facilities (drilling, well servicing, processing, and utilities) affect the structural design and how the topside development process is done
• Recognize and manage key design and operational interfaces between the major components of offshore facilities systems
• Understand and apply the key design, construction, and installation issues associated with fixed and floating platforms to your work

COURSE CONTENT
Offshore systems overview and field architecture selection • Well construction and servicing equipment and operation • Flow assurance • Topside facilities • Oil and gas transportation facilities • Risers systems • Subsea systems • Production operations • Infrastructure impact on design and operations • Effects of the ocean environment • Introduction to naval architecture • Structural design processes and tools • Construction plans and execution • Project management lessons learned • Life-cycle and decommissioning considerations

Flow Assurance for Offshore Production – FAOP

INTERMEDIATE 5-DAY

Flow assurance is a critical component in the design and operation of offshore production facilities. This is particularly true as the industry goes to deeper water, longer tiebacks, deeper wells, and higher temperature and pressure reservoirs. Although gas hydrate issues dominate the thermodynamic design, waxes, asphaltenes, emulsions, scale, corrosion, erosion, solids transport, slugging, and operability are all important issues which require considerable effort. The participant will be presented with sufficient theory/correlation information to be able to understand the basis for the applications. This intensive five-day course has considerable time devoted to application and design exercises to ensure the practical applications are learned.

DESIGNED FOR
Engineers, operators, and technical managers who are responsible for offshore completions, production, and development; technical staff needing a foundation in principles, challenges, and solutions for offshore flow assurance. The course is also appropriate for persons involved in produced fluids flow in onshore production operations.

YOU WILL LEARN HOW TO
• Identify the components of a complete flow assurance study and understand how they relate to the production system design and operation
• Interpret and use sampling and laboratory testing results of reservoir fluids relative to flow assurance
• Understand the basic properties of reservoir fluids and how they are modeled for the production flowline system
• Understand the thermodynamic modeling of steady state and transient multiphase flow in offshore production systems
• Evaluate and compare mitigation and remediation techniques for: gas hydrates, paraffin (waxes), asphaltenes, emulsions, scale, corrosion, erosion and solids transport, and slugging
• Understand the elements of an operability report for subsea production facilities, flowlines, and export flowlines

COURSE CONTENT
Overview of flow assurance • PVT analysis and fluid properties • Steady state and transient multiphase flow modeling • Hydrate, paraffin, and asphaltene control • Basics of scale, corrosion, erosion, and sand control • Fluid properly and phase behavior modeling • Equations of state • Fugacity and equilibrium • Viscosities of oils • Thermal modeling • Multiphase pressure boosting • Slugging: hydrodynamic, terrain induced, and ramp up • Compressing, start-up, and shutdown operations

ABERDEEN, UK 6-10 AUG  $4990+VAT
LONDON, UK 14-18 MAR  $5790
HOUSTON, US 9-13 DEC  $6095+VAT

Flow Assurance for Offshore Production – FAOP

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HOUSTON, US 9-13 DEC  $6095+VAT

*plus computer charge

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Production Operations 1 – PO1

FOUNDATION 10-DAY

PO1 represents the core foundation course of PetroSkills’ production engineering curriculum and is the basis for future oilfield operations studies. Course participants will become familiar with both proven historical production practices as well as current technological advances to maximize oil and gas production and overall resource recovery. The course structure and pace apply a logical approach to learn safe, lean cost, integrated analytical skills to successfully define and manage oil and gas operations. Applied skills guide the participant with a framework to make careful, prudent, technical oil and gas business decisions. Currently emerging practices in the exploitation of unconventional resources including shale gas and oil, and heavy oil and bitumen complement broad, specific coverage of conventional resource extraction.

DESIGNED FOR

Petroleum engineers, production operations staff, reservoir engineers, facilities staff, drilling and completion engineers, geologists, field supervisors and managers, field technicians, service company engineers and managers, and especially engineers starting a work assignment in production engineering and operations or other engineers seeking a well-rounded foundation in production engineering.

YOU WILL LEARN HOW TO

• Understand modern conventional fracture stimulation practices
• Choose cased hole production logging tools and interpret logging results
• Understand the causes of sand production and how to select sand control options
• Employ the five main types of artificial lift systems
• Apply well completion and workover fluid specifications for solids control and filtration
• Plan well intervention jobs using wireline, snubbing, and coiled tubing methods
• Manage corrosion, erosion, soluble and insoluble scales, and produced water handling challenges
• Apply well completion and workover fluid specifications for solids control and filtration
• Employ the five main types of artificial lift systems
• Identify formation damage and apply remedial procedures
• Design and execute successful carbonate and sandstone reservoir acidizing programs
• Understand the causes of sand production and how to select sand control options
• Understand the proper use of oilfield surfactants and related production chemistry
• Identify and successfully manage organic paraffin and asphaltene deposits
• Choose cased hole production logging tools and interpret logging results
• Understand modern conventional fracture stimulation practices
• Understand multistage, horizontal well shale gas and shale oil massive frac job design and operations
• Review heavy oil development and extraction including mining operations and current modern thermal processes

COURSE CONTENT

Importance of the geological model • Reservoir engineering fundamentals in production operations • Understanding inflow and outflow and applied system analysis • Well testing methods applicable to production operations • Well completion design and related equipment • Primary and remedial cementing operations • Perforating design and applications • Completion and workover well fluids • Well intervention: wireline, hydraulic workover units, and coiled tubing • Production logging • Artificial lift completions: rod pump, gas lift, ESP, PCP, plunger lift, and others • Problem well analysis • Formation damage • Acidizing • Corrosion control • Scale deposition, removal, and prevention • Surfactants • Paraffin and asphaltenes • Sand control • Hydraulic fracturing • Unconventional resources: shale gas and oil, heavy oil and bitumen

Virtual Course 2018 Schedule and Tuition (USD)

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Surface Production Operations – PO3

BASIC 5-DAY

This course presents a basic overview of all typical oilfield treating and processing equipment. Participants should learn not only the purpose of each piece of equipment but how each works. Emphasis is on gaining a basic understanding of the purpose and internal workings of all types of surface facilities and treating equipment. A major goal of this course is to improve communication among all disciplines, the field, and the office. Better communication should enhance operational efficiencies, lower costs and improve production economics. Example step-by-step exercises are worked together with the instructor to drive home the important points. Daily sessions include formal presentation interspersed with many short directed questions, discussion and problem solving.

DESIGNED FOR

All field, service, support, and supervisory personnel having interaction with Facilities Engineers and desiring to gain an awareness of the field processing of production fluids. This course is excellent for cross-training and delivers an understanding of all the fundamental field treating facilities.

YOU WILL LEARN

• A practical understanding of all the fundamental field treating facilities: what they are, why they are needed, how they work
• The properties and behavior of crude oil and natural gas that govern production operations
• Field processes for treating and conditioning full wellstream production for sales or final disposition
• The basics of oilfield corrosion prevention, detection, and treatment
• Internal workings of separators, pumps, compressors, valves, dehydrators, acid gas treatment towers, and other treating equipment
• A wide range of produced fluid measurement and treating devices
• A description of treating equipment whether located on the surface, offshore platform, or sea floor

COURSE CONTENT

Properties of fluids at surface • Flowlines, piping, gathering systems; solids and liquid limits • Oil – water – gas – solids – contaminants • Separation and treatment • 2-3 phase separators, free water knockouts, centrifugal filter • Storage tanks, gun barrels, pressure/vacuum relief, flame arrestors • Stabilizers • Foams, emulsions, paraffins, asphaltenes, hydrates, salts • Dehydrators • Water treaters: SP packs, plate interceptors, gas flotation, coalescers, hydrocyclones, membranes • Acid gas treatment: coatings, closed system, chemicals, solvents, conversion, stress cracking • Valves: all types; regulators; Pumps/Compressors: centrifugal, positive displacement, rotary, reciprocating, ejectors • Metering: orifice, differential • Piping, gathering systems; solids and liquid limits • Dehydration, separation and treatment • Corrosion: corrosion rates, materials, maintenance costs • Inhibition and treatment

Production Technology for Other Disciplines – PTO

FOUNDATION 5-DAY

PTO is an asset team course, as it introduces a broad array of important Daily Production Technology practices. Terminologies, expressions, axioms, and basic calculations regularly utilized by production technicians are covered. Emphasis is upon proven technology required to effectively develop and operate an asset in a multidiscipline development environment. Practical application of technology is emphasized. Nodal analysis examples to assess well performance are set up. Well completion equipment and tools are viewed and discussed. Exercises include, basic artificial lift designs, acidizing programs, gravel pack designs, and fracturing programs. Shale gas and oil development challenges are thoroughly explained. Horizontal and multilateral technology is presented.

DESIGNED FOR

Exploration and production technical professionals, asset team members, team leaders, line managers, IT department staff who work with data and support production applications, data technicians, engineering management, and all support staff who require a more extensive knowledge of production technology and engineering.

YOU WILL LEARN HOW TO

• Apply and integrate production technology principles for oilfield project development
• Choose basic well completion equipment configurations
• Perform system analyses (Nodal Analysis) to optimize well tubing design and selection
• Perform basic artificial lift designs
• Apply the latest shale gas and oil extraction technologies
• Understand the chemistry and execution of sandstone and carbonate acid jobs
• Design sand control gravel pack completions
• Evaluate well candidate selection to conduct a hydraulic fracturing campaign
• Apply new production technology advances for smart well completions
• Maximize asset team interaction and understand the dynamics between production technology and other disciplines

COURSE CONTENT

Role and tasks of production technology • Completion design • Inflow and outflow performance • Artificial lift well completion systems (beam pump, gas-lift, ESP, PCP plunger lift) • Formation damage and well acidizing • and more...

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Also Available As A Virtual Course 2018

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*plus computer charge
**Gas Production Engineering – GPO**

**INTERMEDIATE 5-DAY**

Learn the latest methods for calculating gas well performance from reservoir to sales. Reservoir performance covers the fundamentals of reservoir gas flow and details the best methods for testing wells, according to the time and money available. Reserve calculations and diagnostic testing from production data are covered. The importance of flow regime and non-Darcy flow on test design and interpretation is emphasized for new wells and for the possibility of improving the performance of older wells. Also discussed are performances of tight formations, horizontal wells, fractured wells, and methods for estimating gas reserves. Participants will learn to calculate and determine the effect of each system component on total well performance, which permits optimum sizing of tubing, flowlines, separators, and compressors. Problem-solving sessions allow participants to evaluate field problems. Participants receive complimentary software at the end of the course.

**DESIGNED FOR**
Production, reservoir and facilities engineers, and others involved in gas production, transportation, and storage including field supervisors.

**YOU WILL LEARN HOW TO**
- Apply proven techniques to field problems which increase profitability
- Calculate gas well performance from the reservoir to the sales line
- Optimize gas well production
- Relate reservoir and well performance to time
- Predict when a well will die due to liquid loading

**COURSE CONTENT**
Gas properties: real gas behavior equations of state, impurities, mixtures, phase behavior dew point, retrograde behavior, flash calculations; classifying gas reservoirs; Reservoir performance: gas well testing flow after flow, isochronal, stabilized inflow performance; turbulence and skin effects; perforation effects; tight well analysis; horizontal wells, hydraulically fractured wells; Reserve calculations: P/Z plots, energy plots, water influx, abnormal pressure effects; diagnostic testing based on production data; Flow in pipes and restrictions: pressure loss tubing, flowlines, choke, safety valves; effects of liquids-liquid loading, liquid removal methods, multiphase flow correlations, erosional velocity; Compression: types of compressors; compressor selection reciprocating and centrifugal; effects of variables; capacity and horsepower; Total system analysis: tubing and flowline size effects; perforating effects; relating deliverability to time; evaluating compressor installations; analyzing injection wells; Flow measuring: orifice metering design, accuracy, troubleshooting; other metering methods; Condensate reservoirs: reservoir types - wet gas, retrograde; reserve estimates, laboratory simulation; gas cycling; Field operations problems: interpreting P/Z plots; hydrate formation

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**Surface Water Management in Unconventional Resource Plays – SWM**

**INTERMEDIATE 3-DAY**

Water management in unconventional resource plays has become a critical topic to the oil and gas industry in the last decade. In order to establish and implement an optimized water management plan for hydraulic fracturing operations, operators and service companies need an understanding of a broad array of subjects, including water chemistry, systems modeling, water treatment technology, the regulatory landscape, and best practices for field operations. This course first establishes a foundation of knowledge regarding water awareness, water chemistry, fluid dynamics, and water analysis tools. Upon this foundation the course will build a model for optimizing water management in support of hydraulic fracturing operations, providing reviews of best practices and the latest industry technology, while always considering key stakeholders. This course is designed for the practitioner; for the people who will design and implement all or part of a water management plan in unconventional resource plays.

**DESIGNED FOR**
Production, completion, operations, and surface facilities engineers; operations managers, logistics coordinators, field superintendents; any personnel involved in establishing, improving, or supervising the implementation of an organization’s water management plan; personnel, in service organizations seeking a more thorough understanding of the water system in unconventional resource plays.

**YOU WILL LEARN HOW TO**
- Design and implement a water management plan for an unconventional resource plan
- Assess the regional hydrological cycle in the operational area
- Adopt emerging best practices regarding water management?
- Establish a water sampling and analysis program
- Design and run a water treatment technology pilot test
- Find the lowest cost solution for sourcing fluid for hydraulic fracturing operations
- Select a water treatment technology for a project
- Manage the primary service/equipment providers critical to water management
- Establish basic water quality requirements necessary for frac fluid
- Build a water management plan that complies with regulations
- Design and implement an optimized water management plan for hydraulic fracturing operations
- Establish and implement all or part of a water management plan for hydraulic fracturing operations

**COURSE CONTENT**
Global water awareness and the oil and gas industry’s impact on surface water; Water quality considerations for hydraulic fracturing operations; Water treatment and disposal; Acoustic, storage, transportation, disposal, and treatment of water; Holistic field water management; Regulations applicable to water management; Water management system cost modeling

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**2018 Schedule and Tuition (USD)**

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## Operations & Maintenance

### Amine Sweetening and Gas Dehydration for Operations and Maintenance – OT1

**Basic**

This course will provide the basic knowledge required for understanding operating issues in natural gas amine sweetening and dehydration units. Course content is customizable to client needs at no additional cost.

**Designed for**

Plant and facility operations and maintenance technicians, supervisors, and managers.

**You will learn**

- Basic principles of gas processing
- The physical properties of hydrocarbons
- Practical application of the principles of hydrogenation phase behavior
- To determine the water content of produced natural gas
- The problems and dangers of hydrate formation
- Effects of acid gases
- Principles and operational elements of amine sweetening
- Effective methods of hydrate inhibition
- Two types of dehydration processes: absorption and adsorption
- Principles and operational elements of TEG gas dehydration
- Principles and operational elements of mole sieve gas dehydration

**Course content**

Physical properties of hydrocarbons • Phase behavior fundamentals • Water/hydrocarbon behavior • Amine gas sweetening • Amine system operating procedures and problems • TEG equipment • TEG system operating procedures and problems • Care of the TEG system • Mole sieve gas dehydration • Operation and adsorbent life • Mole sieve operating problems and troubleshooting • Makeup water • Anti-foam chemicals • Managing system corrosion

### NGL Extraction, Stabilization and Fractionation for Operations and Maintenance – OT41

**Foundation**

This course is designed to deliver the basic knowledge required for understanding operating issues in NGL (Natural Gas Liquids) extraction and stabilization/fractionation. Course content is customizable to client needs at no additional cost.

**Designed for**

Plant and facility operations and maintenance technicians, supervisors, and managers.

**You will learn**

- About the various unit operations required in gas processing and how they impact one another
- Conditions that favor hydrate formation, and methods to mitigate hydrates (hydrate inhibition)
- Principles and operations of gas compressors (centrifugal/screws (refrigeration units)/reciprocating (regional))
- Principles, operations, and troubleshooting mechanical refrigeration systems (propane economized systems)
- Molecular sieve dehydration operations and issues
- Operating principles, typical performance, and issues in NGL extraction processes
- NGL stabilization and fractionation processes

**Course content**

Overview of gas processing • Water/hydrocarbon behavior • Amine system operating procedures and problems • TEG equipment • TEG system operating procedures and problems • Care of the TEG system • Mole sieve gas dehydration • Operation and adsorbent life • Mole sieve operating problems and troubleshooting • Makeup water • Anti-foam chemicals • Managing system corrosion

### LNG Facilities for Operations and Maintenance – OT43

**Foundation**

This 5-day, LNG facilities course provides an overview of field operations, and an in-depth review of the in-plant equipment and processes. The course includes the two most common types of LNG liquidation processes, the AP-C3MR™ and Conocophillips Optimized Cascadex® Process. Class exercises/problems focus on the application of theory to operational trends, so operators can understand their processes and become more proficient at identifying issues and troubleshooting problems before production suffers. Course content is customizable to client needs at zero additional cost.

**Designed for**

LNG facility operators who require a working knowledge of the various processes used in LNG facilities, including the common operational difficulties that may arise and operational tactics used to resolve them. Also suitable for maintenance technicians, supervisors, and managers, as well as other non-engineering personnel who would benefit in an understanding of gas processing techniques that can be applied in their daily work activities.

**You will learn**

- Overview of oil and gas processing, including typical field operations
- The required feed quality specifications for LNG facilities, including issues with common contaminants
- Separation equipment with a focus on critical separation equipment in LNG facilities
- Operational aspects of acid gas removal units (ARU) for LNG facilities
- Gas dehydration processes for LNG (including pre-cooling and molecular sieve)
- Mercury removal processes for LNG, and location/performance in the facility
- Centrifugal compressor operations and issues
- Refrigeration system operational principles (propane, cascade and mixed refrigerant)
- NGL stabilization and fractionation processes (regional)
- LNG C3MR™ Process Overview
- LNG AP-C3MR™ Process Overview
- LNG storage operations and considerations
- LNG ship loading and boil-off gas management issues and considerations
- Application of hydrocarbon physical properties and phase behavior to understand the process operational issues within the overall facility
- Gas turbine operations and issues
- Hydrocarbon physical properties and phase behavior as the natural gas flows through the plant

**Course content**

Overview of oil and gas processing • Separation equipment • LNG feed quality requirements • LNG pre-treatment systems (ARU) • Fundamentals of centrifugal compression • Refrigeration principles (propane, cascade and mixed refrigerant) • NGL stabilization and fractionation (regional) • LNG COP Cascade® Process Overview • LNG APCI C3MR™ Process Overview • LNG storage operations and considerations • LNG shiploading operations and considerations • Boil-off gas management methods • and more...

### 2018 Schedule and Tuition (USD)

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</tbody>
</table>

See website for dates and locations

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Crude Oil Pipeline Operations – OT50

FOUNDATION 5-DAY
This course utilizes case studies and industry best practices for operating and maintaining onshore crude oil and liquid pipeline systems that maximize life cycle reliability, employee, public, and environmental safety, and operational cost effectiveness. It focuses on open discussions and troubleshooting techniques that may be applied to crude, HVL (High Volatility Liquids) and refined product pipelines and their associated infrastructure. The course aims to improve the operation profitability and communication with management and engineering staff.

DESIGNED FOR
Pipeline operations personnel who require a working knowledge of onshore liquid pipeline and terminal systems, including the common operational difficulties that may arise and tactical tools used to resolve them. Also suitable for maintenance personnel, metering technicians, lead supervisors, area managers, and engineering staff that need a working knowledge of field pipeline operations.

YOU WILL LEARN HOW TO
- Apply regulatory codes, standards, and industry guidelines (PHMSA 195, ASME B31.4, API-1173 and others) that control and guide the operation and maintenance of pipeline facilities
- Explain fluid properties and behavior of crude oils, wax behavior, temperature relationships and use of DFA in crude oil pipelines
- Explain pipeline hydraulics, pipeline pressure gradients and predict capacity on the system
- Identify pipeline MOP, surge and causes of overpressure and mitigation measures
- Explain pipeline facilities; pump stations, filtration, metering and LACT units, sampling and testing, pigging equipment, tank terminals and truck/rail loading facilities
- Explain liquid pipeline operations; commissioning and pumping/testing, startup, stopping, pigging and pig receiver operations, measurement and sampling activities
- Identify principle causes of loss of containment and mitigating measures; corrosion, environmental cracking, overpressure, 3rd party damage and error
- Review regulatory compliance requirements for CFR 49, Part 195, to be better prepared in the case of compliance audits
- Explore emergency response measures to spills and loss of containment

COURSE CONTENT
Crude oil transportation systems • Industry codes and regulations, scope and applicability • Crude oils, waxes and DFA, fluid properties and behavior • Hydraulic analysis of pipelines and gradients • Pipeline pumps – components, operation, seal systems and seal leak detection • Pipeline surge and overpressure protection systems • Pipeline facilities – filtration, pressure controls, pigging equipment • Terminal facilities – tanks, truck/rail loading, metering, sampling and proving • Pigging goals, processes and activities • Pipeline repairs and maintenance • Corrosion overview and prevention • Leak detection methods • CFR 49, Part 195 review of documentation requirements and terminology

Turnaround, Shutdown and Outage Management – TSOM

INTERMEDIATE 3-DAY
Scheduled turnarounds are difficult to manage. Managing a surprise shutdown or outage is like firefighting. Firefighters succeed because they know what strategies work and are highly trained to handle complex, risky situations. Uncertainty and complexity abound when a plant is down. Extra work can appear when equipment is opened and inspected. Integrating project work increases the challenge. Experienced instructors show you how to control scope uncertainty, tackle the complexity of integrating project work, and get the facility restarted. Upon completion you will know how to deploy scarce resources (time, people and materials) to complete work on time and within budget; utilize best practices in TSO planning, execution and closeout; and manage engineering, maintenance, operations and project interfaces. A blend of instruction, guided discussion, and hands-on exercises using real world examples makes the sessions thought provoking. The exercises will include both single and group activities.

DESIGNED FOR
Managers, supervisors, engineers, planners and schedulers in maintenance, operations, reliability, HSE, procurement and projects should attend. This course also helps business, commercial, finance and other non-technical personnel who want to know more about turnaround, shutdown and outage best practices.

YOU WILL LEARN HOW TO
- Establish targets to ensure support from all facility stakeholders
- Develop a robust resource plan and get the resources you need
- Integrate scopes for both maintenance and projects
- Establish turnaround scope selection criteria early
- Select a computerized work system
- Address key outage constraints and operations interfaces
- Develop a robust contracting plan
- Develop an execution plan
- Measure and control shutdown progress

COURSE CONTENT
Six-phases of turnaround, outage and shutdown management • Issues and challenges • Quality control • Health, safety and environmental planning • Computerized systems benefits and choices • Integrating the plan • Managing stakeholders and resources • Procurement and contracting • Tracking progress and controlling change

Applied Maintenance Management – OM21

BASIC 5-DAY
No matter the price of oil, safe, efficient operations require well managed, integrated asset management. Effective, well organized maintenance management is the key. In this course, participants will receive a sound, integrated, basic knowledge of the maintenance function and how to progress towards world-class performance. Individual action plans will carry course learning into the work environment. A pre and post seminar self-assessment will be given to indicate delegates’ competency improvements. The assessment is taken from the PetroSkills industry standard competency map for Maintenance Management.

DESIGNED FOR
Maintenance supervisors, team leaders, or managers needing to improve their maintenance programs. This course is a broad survey of essential aspects of maintaining a safe, efficient, and reliable facility asset.

YOU WILL LEARN
- World class maintenance standards and how to apply them
- Key performance indicators for your dashboard
- Essential elements of work planning and scheduling
- Optimization of preventive and predictive maintenance
- To focus your resources on critical equipment
- How to work with contractors more effectively
- Development of organizational competence

COURSE CONTENT
World class standards • Maintenance strategies • Planning and scheduling • Optimizing preventive and predictive maintenance • Identifying critical equipment • Developing organizational competence • Presenting your action plan

Maintenance Planning and Work Control – OM41

FOUNDATION 5-DAY
No matter what the price of oil is, safe facilities operations require effective maintenance work control. ISO 55000 (PAS 55) is the asset management standard everyone is moving towards. This course is designed to build competency in Work Control as a primary skill set required to achieve these new standards. It will focus on the six phases of work management: work identification, planning, prioritization, scheduling, execution, and history capture. These essential skills are the key components of integrity management, safety, efficient resource utilization, and reliable operation: A pre and post self-assessment will be used to measure competency improvement. In order to improve facility asset management, each participant will develop an action plan to help their organizations in the long-term effort to become more efficient and safe.

DESIGNED FOR
Maintenance managers, superintendents, supervisors, team leaders, and planners engaged in work management, planning, and scheduling.

YOU WILL LEARN
- To develop world class planning and work control
- To employ business process analysis techniques in work control
- How to use a gap analysis on your work management system
- Step-by-step work control from identification through using work history
- Optimization of preventive and condition-monitoring activities
- Techniques: critical equipment analysis, critical spares control, and emergency response work

COURSE CONTENT
Work identification • Planning prioritization • Scheduling execution • History records • Optimizing preventive maintenance • Predictive maintenance planning • Critical equipment focus • Emergency response

2018 Schedule and Tuition (USD)

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- Mechanical Maintenance
- Pipeline Fundamentals
- Process Operations
- Production Operations
- Refinery Operations
- Refinery Process Units
- Rotating & Reciprocating Equipment
- Stationary Equipment
- Turnaround Planning

**Competent Person Fall Protection – FPST**

**BASIC** 5-Day

**NEW**

This comprehensive training program is for anyone who develops or impacts fall protection policy, as well as those involved with design practices, facility or production modifications and equipment procurement. The goal of training is to provide participants with the knowledge to solve fall protection issues before they arise. Attendees will acquire the tools required to become certified OSHA-competent persons and the skills to develop and implement a comprehensive, cost effective and attainable fall hazard control system. The course provides interactive instruction, multimedia resources, and knowledge check that have been developed to train attendees to the competent person level.

**DESIGNED FOR**

This course is intended for safety directors, safety professionals, fall protection program administrators, managers, facility engineers, production supervisors, and maintenance supervisors.

**YOU WILL LEARN**

- To recognize myths and facts surrounding fall protection
- To describe how fall protection fits into the core elements of your safety program
- To determine the key resources for identifying fall hazards
- To rank abatement options using objective criteria
- Regulatory requirements for access, surfaces, and edge protection
- About lift equipment including requirements for vacating or entering an aerial lift
- The regulations and standards for scaffolding including supported scaffolds and suspension scaffolds
- How to minimize the dangers of falling objects
- About the initial ANSI fall protection standards and the new ones within the 2595 family
- The difference between certified and non-certified anchorages
- How to recognize how ANSI applies to various equipment components
- How to inspect fall hazard equipment
- About typical roof fall hazards
- About fall clearances including sample fall clearance calculations
- To identify the elements of a horizontal lifeline system and recognize the pitfalls
- The importance of preplanning a fall protection rescue as a part of a pre-task plan
- To develop a rescue procedure for a specific personal fall arrest system

**COURSE CONTENT**

Fall protection program overview • Fall hazard risk assessment • Fall hazard abatement • Engineering controls • Lift equipment • Scaffolding • OSHA requirements and ANSI standards • Equipment inspection • Roof fall protection • Fall clearances • Anchorages • Horizontal lifelines • Rescue

**Applied Environmental Management – HS23**

**FOUNDATION** 5-DAY

This course provides hands-on opportunities to learn and apply tools, techniques, and systems of environmental management in oil, gas, and petrochemical industries. Participants work as a member of a team to develop and improve the environmental management system (EMS) and environmental performance of company Petros, a fictitious but highly-realistic case study. Application of the learned techniques is practiced at the upstream Caspian Explorer platform and the downstream Orkney Depot.

The course is designed to introduce participants to solutions to environmental challenges and to become an agent for change in their own organization. The course is recommended for those developing a career in environmental management and/or planning to progress towards Full or Associate membership of the Institute of Environmental Management and Assessment (IEMA) using our IEMA Certificate in Environmental Management course (HS71).

**DESIGNED FOR**

Environmental professionals, H&S practitioners wishing to broaden their skills, operational managers, engineers, supervisors, project managers, and other staff who have delegated responsibilities for implementing environmental improvement(s).

**YOU WILL LEARN HOW TO**

- Apply environmental management systems and environmental controls which bring enhanced legal, financial, and reputational improvement
- Communicate effectively with management and staff at all levels of the organization on environmental improvement
- Incorporate EMS into strategic plans, operational activities, products, and services
- Identify environmental aspects, and how to assess the environmental impacts of activities, products, and services in normal, abnormal, and emergency situations
- Use an EMS to confirm legal compliance
- Plan and implement improvements in environmental performance
- Develop monitoring procedures and environmental performance indicators
- Develop and implement an environmental audit program
- Engage in environmental reporting, including use of recognized methods and formats for presenting reports internally and externally

**COURSE CONTENT**

Effective use of an EMS • Identifying aspects and assessing impact • Environmental improvement programs, including pollution abatement and control techniques • Emergency preparedness and response • Environmental communication • Environmental performance monitoring • Environmental auditing and reporting • Management review

**Applied HSE Management – HS28**

**FOUNDATION** 5-DAY

In just five days, learn how to develop and use an HSE management system to drive improvement and learning into your organization! This course is about understanding and applying common HSE management systems in oil, gas and petrochemical industries. It includes a rich blend of knowledge development sessions, individual and team exercises, problem-solving, and sector case studies. These come together to challenge participants in a realistic but fictional case study facility. Petros Barola Limited.

Course content is built around the PetroSkills competence maps at the Fundamental Application level. The course may be taken either independently or in conjunction with our Applied Safety, Applied Health, and/or Applied Environment courses. This course also provides practical learning for participants seeking professional accreditation through Distance Learning Vocational Diploma in Occupational Safety and Health or Accredited Environmental Practitioner Programmes (to MEIM and CEnv - HS70 and HS71 respectively).

**DESIGNED FOR**

Functional specialists seeking to improve their knowledge and application of HSE management systems, including operations supervisors, engineers, contract managers, project managers, and all staff who have the responsibility for designing, implementing, or supporting HSE management. Some prior knowledge of HSE management related topics is desirable but not essential.

**YOU WILL LEARN HOW TO**

- Successfully apply the principle elements of an HSE Management system aligned to the international standards ISO 14001 (environment) and OHSAS 18001 / ISO 45001 (occupational health and safety), and how to relate these to company management systems
- Explain responsibilities for HSE management and the characteristics of successful leadership and management styles
- Use key tools associated with HSE management including Hazard, risk assessment, JHA, JSA, PTW, LOTO, and active (leading) and reactive (lagging) monitoring
- Shape and initiate improvement in the safety culture of their own organizations

**COURSE CONTENT**

Leadership and commitment • HSE policy and strategic objectives • Legislation and regulation • Organization, responsibilities, and resources • Professional training and behaviors • Risk assessment and hierarchy of control • Planning and procedures • Contractor controls • Security • Emergency preparedness and response • Performance management • Incident reporting and investigation • Auditing • Management review and improvement

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Fundamentals of Process Safety – PS2

FOUNDATION 5-DAY
The course will cover the fundamentals of Process Safety for all staff levels of processing facilities in the upstream and downstream oil, gas, and petrochemical industry. To identify how different disciplines and roles can have an impact on Process Safety performance, there is a rolling case study (Project COLEX) throughout the course that involves the installation of a separator vessel, and the Process Safety considerations and implications are explored and discussed at the various stages, from design to full operation.

DESIGNED FOR
The course will benefit all staff associated with the operation, maintenance, and governance in production and processing facilities and is relevant to roles, including senior management, project and engineering support teams, HSE support, supervisors, and operators and maintenance technicians. It provides an understanding of the design basis and essentials for safe operations, without addressing the more detailed calculation aspects covered in Process Safety Engineering PS4.

YOU WILL LEARN HOW TO
• Identify the systems and processes required to create process safety in a high hazard installation
• Identify and choose appropriate techniques and tools to qualitatively assess process hazards
• Determine appropriate risk reduction strategies and identify effective risk reduction measures to prevent, control, and mitigate process safety risk
• Recognize and develop systems to manage Process Safety in operations through operating procedures and operating limits, ensuring plant integrity through maintenance and inspection
• Use a management of change process to minimize risk of change
• Identify and monitor key performance measures and verifications to maintain and improve safety performance

COURSE CONTENT
Business context for Process Safety • Risk assessment (hazard identification, hazard scenarios, consequence and likelihood analysis, and risk analysis and tools and techniques) • Risk reduction measures (barriers) [types and hierarchy of risk reduction measures (barriers)] • Management of process safety in operations [operating procedures, design and operating limits, human factors, inspection and maintenance, and emergency response] • Management of change • Learning from previous incidents and near misses • Self-verification and measurement • Process safety key performance indicators • Management review and auditing • Process safety leadership [governance and culture]

Risk Based Process Safety Management – HS45

FOUNDATION 5-DAY
This course introduces process safety management in the oil and gas industry, the elements and benefits of process safety management systems, and tools for implementing and managing a system. In this course the participant will learn to use tools and techniques for managing process safety. The Center for Chemical Process Safety’s (CCPS) book titled “Guidelines for Risk Based Process Safety” or “RBPS Guidelines” will be the text for this course. Participant centered exercises and selected case studies will be used to build on the concepts that CCPS advocates for risk based process safety.

Throughout the course, participants will be challenged to think how their process safety management system can be enhanced and modified to meet the concepts of risk-based decision making. An individual action plan will be developed to apply the information from the course to the workplace.

DESIGNED FOR
HSE professionals, operations and maintenance technicians, engineers, supervisors and project managers requiring a basic foundation in developing and managing process safety engineering. The more technical aspects of process safety engineering are covered in PS4, Process Safety Engineering.

YOU WILL LEARN HOW TO
• Identify processes applicable to Process Safety Management (PSM) and describe relevant terms used
• Identify which standards are to be applied for managing process hazards
• Apply programs and tools for managing a PSM system
• Choose appropriate decision making methods and tools to identify process hazards
• Describe and use techniques available for control of hazards associated with process designs
• Describe the criteria and methods of selecting equipment and safety guarding controls
• Research and apply the performance parameters for the safety systems in operations
• Explain the role of all disciplines and their contribution to the management of potential HSE hazards

COURSE CONTENT
Process safety culture and competency • Compliance with standards • Understand hazards and risk • Operating procedures and safe work practices • Asset integrity and reliability • Management of change • Conduct of operations • Incident investigation (associated with plant failures) • Measurement and metrics • Management review and continuous improvement

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• Reduce expenses of classroom scheduling, travel, and instructor fees

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Introduction to Petroleum Business – IPB

BASIC 3-DAY
Creation of shareholder value should be at the heart of every business decision. This course is designed for technical professionals in the petroleum industry who want to understand the specifics of the petroleum business and how you will contribute to the financial success of your company. The course will introduce delegates to the structure of the petroleum business including supply and demand, how oil companies are organized and financed and what it takes to be financially successful. Success will be explored through an understanding of how we calculate long-term shareholder value both at the corporate and project level as well as the valuation of competitive advantage and incorporation of risk assessment in our models. Delegates will be introduced to the primary accounting financial statements and what they tell us about a company. Common accounting and economic terms and metrics will be reviewed. Participants should bring a PC with excel software to complete exercises.

DESIGNED FOR
Engineers, geologists, geophysicists, landmen, HR and other non-finance and accounting professionals who need an introduction to the business aspects of the petroleum industry including the interplay of finance and economic evaluation in the creation of long-term shareholder value.

YOU WILL LEARN
• How the petroleum business is structured and capital is raised
• What is shareholder value and how it is created
• The critical importance of seeking competitive advantage
• Economic and accounting terminology
• How to make an economic valuation of an investment and assess its competitive advantage
• How value creation impacts share price
• How shareholder value is measured
• What is risk and how it is assessed in economic evaluations

COURSE CONTENT
The importance of creating value for shareholders • History and characteristics of the oil and gas business • Introduction to Economic Evaluation including Net Present Value, Internal Rate of Return, and risk • Introduction to the key accounting financial statements and terms • The need for competitive advantage and how it is measured • How to develop spreadsheets to conduct economic evaluations

Basic Petroleum Economics – BEC3

BASIC 3-DAY
Could you answer the following three questions for your next project? What will it cost? What is it worth? Will it earn sufficient profit? Before undertaking any project, these questions should be answered, and this course will provide the fundamentals necessary to enable you to do so. Contractual arrangements, which also significantly impact the economic viability of a project, are covered. Participants practice cash flow techniques for economic evaluations and investigate frequently encountered situations. Each participant will receive Economics of Worldwide Petroleum Production, written specifically for PetroSkills courses.

DESIGNED FOR
Managers, engineers, explorationists, field accounting supervisors and other personnel who need to develop or improve their skill and understanding of basic economic analysis and profitability of petroleum exploration and production.

YOU WILL LEARN
• How to evaluate the economic viability of a project
• Cash flow techniques applicable in economic evaluations
• How to use economic criteria to choose investments
• Models to weigh risk and uncertainty

COURSE CONTENT
Forecasting oil production • Defining: “reserves”, operating expenses, capital expenditures, inflation, factors affecting oil and gas prices • Cash flow techniques • Economic criteria: interest, hurdle rate, time value of money, selection, ranking criteria • Risk, uncertainty: types of risk, mathematical techniques, probabilistic models, uncertainty in economic analysis • Tips on economic factors in computer spreadsheet analysis • Ethics in economic analyses

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Expanded Basic Petroleum Economics – BEC

BASIC 5-DAY
Could you answer the following three questions for your next project? What will it cost? What is it worth? Will it earn sufficient profit? Before undertaking any project, these questions should be answered. This course will provide the fundamentals necessary to enable you to do so. Budgeting and financing, accounting, and contractual arrangements, which also significantly impact the economic viability of a project, are covered. Participants practice cash flow techniques for economic evaluations and investigate frequently encountered situations. Participants are invited to submit their own economic problems (in advance), if appropriate. Each participant will receive Economics of Worldwide Petroleum Production, written specifically for PetroSkills courses.

DESIGNED FOR
Managers, engineers, explorationists, field accounting supervisors and other personnel who need to develop or improve their skill and understanding of basic economic analysis and profitability of petroleum exploration and production.

YOU WILL LEARN
• How to evaluate the economic viability of a project
• Cash flow techniques applicable in economic evaluations
• Models to weigh risk and uncertainty
• Techniques to determine expected value
• The effect finance, budgeting, and contractual agreements have on a project
• The basic principles of accounting

COURSE CONTENT
Forecasting oil production • Defining: reserves, operating expenses, capital expenditures, inflation, factors affecting oil and gas prices • Cash flow techniques • Economic criteria: interest, hurdle rate, time value of money, selection, ranking criteria • Risk, uncertainty: types of risk, mathematical techniques, probabilistic models, uncertainty in economic analysis • Financial, ownership in the oil and gas industry: business arrangements between operators, between mineral owners • Accounting versus cash flow: accounting principles and definitions, differences between accounting cash numbers, depreciation, depletion, amortization • Budgeting types, processes, selecting of projects for the budget • Economic analysis of operations • Computer economics software • Tips on economic factors in computer spreadsheet analysis • Ethics in economic analyses

2018 Schedule and Tuition (USD)

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Cost Management – CM

FOUNDATION 5-DAY
Few problems threaten the petroleum businesses more than uncontrolled costs. Economic realities have made it necessary for most companies to operate with a “lean and mean” philosophy. As the price of our products fluctuates widely, the most vulnerable companies are those that are ineffective in understanding and managing their costs. The ability to properly manage costs is now paramount in a company’s success and even their ultimate survival. As the energy industry goes through its most monumental changes since the 1970s, the companies that can identify efficiencies and inefficiencies will be able to react to the challenges of the global market place, thus generating higher profits. This seminar is an introduction to Practical Cost Management techniques designed to help the participant understand the underlying dynamics of cost using recent events and trends, using relevant exercises, timely case studies and role-playing techniques.

DESIGNED FOR
Operating managers, field personnel, project managers, technology managers, budget managers, or anyone wanting to manage costs more efficiently and effectively. A familiarity with finance is helpful but not required.

YOU WILL LEARN HOW TO
• Understand the different cost classifications and cost drivers
• Determine and monitor the behavior of costs
• Build your own activity dictionary
• Design management control system that works
• Understand the principles of Activity Based Cost Management (ABCM) and its development and implementation
• Analyze capital projects using the proper tools and techniques
• Manage and not mismanage costs
• Develop tools to use for managing costs
• Evaluate costs for effectiveness

COURSE CONTENT
Defining costs, classifications and terminology for an E&P company • Determining cost objects, cost drivers and their behaviors • Analyzing different types of cost management systems • Using Activities Based Management (ABM) to monitor costs and processes Building and using an activity dictionary • Using value added costs versus non value-added costs for improvement Distinguishing between cost effectiveness and cost efficiencies • Developing productivity measurements that work • Operating Cost Management using the budgets more efficiently and effectively Using GAP analysis in measuring productivity of costs • Support departments cost allocations Transfer pricing • Determining the break-even cost and volumes • Using variance analysis budget for monitoring performance • Optimizing the supply chain • Developing and analyzing capital investment projects • Robustness vs. sustainability • Life Cycle Costing • Using different scenarios to more effectively manage costs Performance Measurement using capacity management techniques

2018 Schedule and Tuition (USD)

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2018 Schedule and Tuition (USD)

PETROLEUM BUSINESS
PETROLEUM BUSINESS

2018 Schedule and Tuition (USD)

HOUSTON, US
4-8 JUN $4240
17-21 SEP $4890+VAT

LONDON, UK
18-22 JUN $4240
8-12 OCT $4890+VAT

KUALA LUMPUR, MYS
6-10 AUG $5070

TULSA, US
9-13 SEP $4890+VAT

*plus computer charge

2018 Schedule and Tuition (USD)

HOUSTON, US
11-15 JUN $4440
18-22 JUL $4890+VAT

LONDON, UK
15-19 AUG $5070

For more information, please contact us:
+1.918.828.2500  |  petroskills.com  |  +1.800.821.5933 (toll free North America)

Any course is available inhouse at your location. Contact us today.

Economics of Worldwide Petroleum Production – EWP

FOUNDATION 5-DAY

In the area of corporate and international petroleum production, do you know how to choose the best investments? Can you properly evaluate investment opportunities? Do you know what investment precedes experience and which criteria to use for best results? Answers to these questions will greatly improve your ability to make profitable decisions. Techniques for predicting profit, production, operating costs, and cash flow enable the analyst to evaluate decision alternatives for optimum results. Understanding cost of capital, financial structure, risk and uncertainty, present worth, rate of return, and other economic yardsticks enhances the quality and the value of economic analysis. Discussion of real-life examples with participants from many different countries enhances the value of the course.

DESIGNED FOR

Managers, supervisors, and operating personnel concerned with costs, profitability, budgets, the company bottom line and other aspects of economic analysis of petroleum production on a project, corporate, and worldwide basis, who have had some previous experience in this area. Due to similarity in content, PetroSkills recommends that participants take this course if they have some previous experience in this field as the course content is more advanced than Expanded Basic Petroleum Economics. Take one or the other, but not both courses.

YOU WILL LEARN HOW TO

• Use cash flow techniques in economic evaluations
• Evaluate and choose investment opportunities
• Use models to weigh risk and uncertainty
• Evaluate decision alternatives using predictive techniques
• Evaluate how projects affect the corporation

COURSE CONTENT

• Pricing: natural gas, marker crudes, DPEC, spot and futures markets, transportation
• Production rate: mathematical models
• Cash flow: revenue, capital and operating costs, spreadsheet exercises
• Economic evaluation: present value concepts, sensitivity and risk analysis, decision trees, royalty, sources of capital, incremental economics, sunk costs, inflation
• Budgeting: examples and exercises, long-range planning
• Cash versus write-off decision: depreciation, depletion, and amortization
• How to read an annual report: statements, financial ratios, what is and is not included, reading between the lines
• Worldwide business operations: concessions, licenses, production sharing contracts, joint ventures, cost of capital, sources of funding, debt and equity
• Performance appraisal: buy/sell assessments
• Computer economics software
• Tips on format and inclusion of economic factors in computer spreadsheet analysis
• Ethics in economic analyses

Petroleum Finance and Accounting Principles – PFA

FOUNDATION 5-DAY

Making the most efficient use of your resources is critical to the success of any company. Finance and accounting comprise the universal language and help you manage those resources effectively. Planning and decision making that occur in an informal financial context permit better application of resources and promote competitive advantage. The aim of this course is to improve delegates’ job performance by enhancing their understanding of current international practices in finance and accounting within the E&P industry. The latest issues are discussed.

DESIGNED FOR

Personnel new to the oil and gas accounting industry - accounting, finance, or economists, others desiring to understand or refresh their knowledge of basic petroleum accounting concepts, financial personnel needing to understand unique issues as they relate to the petroleum industry, and technical or asset team members looking for the basic concepts of accounting and finance. Participants are encouraged to bring their company’s financial reports. This course may qualify for up to 34 hours of CPE for US CPAs.

YOU WILL LEARN HOW TO

• Understand financial reporting requirements for oil and gas companies under IFRS and U.S. GAAP
• Apply basic concepts and terminology for accounting and finance in oil and gas
• Create accounting statements, including a cash flow statement from data accumulation to audited financial statements
• Distinguish between the different financial statements and their roles
• Distinguish between financial, managerial, and contract (joint operations) accounting
• Recognize the different oil and gas accounting methods
• Determine the difference between profits and cash flow
• Apply capitalization rules and depreciation methods
• Recognize accounting treatments of joint ventures such as Production Sharing Agreements
• Evaluate capitalized assets using a ceiling-test
• Read and understand those confusing footnotes
• Prepare, read, and use the disclosures for oil and gas companies
• Recognize how accounting decisions can affect earnings, cash flows, and operational decisions
• Calculate, understand, and analyze financial reports and basic oil and gas ratios

COURSE CONTENT

• Getting started: financial terms and definitions, the language of business; accounting rules, standards, and policies
• Constructing the basic financial statements
• Classifying revenues, assets, liabilities, and equity
• Comparing different accounting elements
• Accounting for joint operations
• Accounting and reporting

Petroleum Risk and Decision Analysis – PRD

FOUNDATION 5-DAY

Good technical and business decisions are based on competent analysis of project costs, benefits and risks. Participants learn the decision analysis process and foundation concepts so they can actively participate in multi-discipline evaluation teams. The focus is on designing and solving decision models. About half the problems relate to exploration. The methods apply to R&D, risk management, and all capital investment decisions. Probability distributions express professional judgments about risks and uncertainties and are carried through the calculations. Decision tree and influence diagrams provide clear communications and the basis for valuing each alternative. The complementary Monte Carlo simulation technique is experienced in detail in a hands-on exercise. Project modeling fundamentals and basic probability concepts provide the foundation for the calculations. The mathematics is straightforward and mostly involves only common algebra. This is a fast-paced course and recommended for those with strong English listening skills. This course is intended as the prerequisite for the Advanced Decision Analysis with Portfolio and Project Modeling course.

DESIGNED FOR

Geologists, engineers, geophysicists, managers, team leaders, economists, and planners.

YOU WILL LEARN HOW TO

• Describe the elements of the decision analysis process and the respective roles of management and the analysis team
• Express and interpret judgments about risks and uncertainties as probability distributions and popular statistics
• Represent discrete risk events in Venn diagrams, probability trees, and joint probability tables
• Solve for expected values with decision trees, payoff tables, and Monte Carlo simulation (hand calculations)
• Craft and solve decision models
• Evaluate investment and design alternatives with decision tree analysis
• Develop and solve decision trees for value of information (VOI) problems

COURSE CONTENT

• Decision Tree Analysis: decision models, value of information (a key problem type emphasized in the course), flexibility and control, project threats and opportunities • Monte Carlo Simulation: Latin hypercube sampling, portfolio optimizations, decision criteria and policy: value measures, multiple objectives, HSE, cap spend constraint, risk aversion • Influence Diagrams: decision tree modeling, sensitivity analysis, modeling acceptable loss and benefits and risks. Participants learn the decision analysis process and foundation concepts so they can actively participate in multi-discipline evaluation teams. The focus is on designing and solving decision models. About half the problems relate to exploration. The methods apply to R&D, risk management, and all capital investment decisions. Probability distributions express professional judgments about risks and uncertainties and are carried through the calculations. Decision tree and influence diagrams provide clear communications and the basis for valuing each alternative. The complementary Monte Carlo simulation technique is experienced in detail in a hands-on exercise. Project modeling fundamentals and basic probability concepts provide the foundation for the calculations. The mathematics is straightforward and mostly involves only common algebra. This is a fast-paced course and recommended for those with strong English listening skills. This course is intended as the prerequisite for the Advanced Decision Analysis with Portfolio and Project Modeling course.

DESIGNED FOR

Evaluation engineers, analysts, managers, planners, and economists. This course is intended for professionals involved with developing project evaluation, portfolio, and other forecasting and assessment models. Prior background in decision analysis is expected. Before registering, please visit http://www.decisionapplications.com/ada-pre-read/ to review a course prerequisites list and to take a short self-assessment quiz. You may login using ‘ada’ (no quotes) as the password.

YOU WILL LEARN HOW TO

• Frame, build, and evaluate decision models and extract key insights
• Apply the exponential utility function for risk policy
• Design investment portfolio optimization models that include constraints, requirements, and typical interrelationships between projects
• Use decision tree software for value of imperfect information analysis
• Use Monte Carlo simulation software with optimization
• Develop quality Excel models for projects and portfolios

COURSE CONTENT

Decision Modeling: application of DA process for modeling, influence diagrams, judgments and biases; sampling error bias; sensitivity analysis; documentation and good modeling practices; real options overview • Monte Carlo Simulation: multi-pay prospect ranking (similar to play analysis); calculating probabilities and distributions with simulation; modeling and optimizing investment portfolios; valuing added control and flexibility; stopping rules; ways to model correlation • Decision Tree Analysis: value of information review; sensitivity analysis; solving with utility for risk aversion • Decision Policy: portfolio optimization to maximize economic value; efficient frontiers; multi-criteria decision making; risk policy as a utility function; calculating expected utility and certainty equivalent; insurance and hedging; optimizing working interests • Implementation: eliciting a decision maker’s or organization’s preferences for trade-offs among objectives, time value, and risk attitude; decision analysis presentation agendas and formats; special topics from the instructor’s own research and experience

Advanced Decision Analysis with Portfolio and Project Modeling – ADA

SPECIALIZED 5-DAY

Quality forecasts and evaluations depend upon well-designed project and portfolio models that are based upon clear decision policy: sound professional judgments, and a good decision process. In this course participants learn to build good models. We use the familiar Microsoft Excel spreadsheet as the platform for project and risk assessment models. Add-in software provides Monte Carlo and decision tree capabilities. The course content is focused on the evaluation concepts and techniques, rather than particular software programs.

DESIGNED FOR

Evaluation engineers, analysts, managers, planners, and economists. This course is intended for professionals involved with developing project evaluation, portfolio, and other forecasting and assessment models. Prior background in decision analysis is expected. Before registering, please visit http://www.decisionapplications.com/ada-pre-read/ to review a course prerequisites list and to take a short self-assessment quiz. You may login using ‘ada’ (no quotes) as the password.
Fundamentals of International Oil and Gas Law – IOG

FOUNDATION 5-DAY

International petroleum transactions occur within a complex legal environment that limits what petroleum companies, host governments and service companies can do, and interprets and enforces many of their promises. Petroleum professionals often lack the broad understanding of what makes up this legal environment and how it can have an impact on their work. This course is designed to give participants a basic understanding of the legal fundamentals that make their international transactions work, including the principles that apply to interpreting and enforcing their agreements, the procedures for resolving their disputes, addressing interpretational issues posed by common contract provisions, and avoiding liability under environmental and bribery laws. The course will teach participants to confidently identify potential legal problems, address them before they become serious, and facilitate the smooth interaction between oil and gas professionals, host government representatives, and their lawyers.

YOU WILL LEARN HOW TO
• Recognize differences between international legal systems and transactions
• Understand legal fundamentals behind international transactions

COURSE CONTENT
Law governing international petroleum transactions (including significant differences between various national legal systems, and the sources, principles, and limits of international law as applied to petroleum transactions) • Interpretation and enforcement of treaties and private contracts • Effects of international trade (and producing country) agreements such as the E.U., NAFTA, Mercosur, and OPEC • Dispute resolution approaches, including litigation and arbitration • Procedures under and enforcement of common arbitration provisions • Legal defenses available to foreign companies, states, and state-owned or connected entities, and recognition and enforcement of judgments and arbitration awards • Basic legal concepts of ownership of mineral rights (onshore, offshore, and deep sea bed) • Expropriation and compensation issues • State-owned entities and privatization • Laws bearing on development rights • Legal interpretational issues of common contract provisions Interpretational issues for service contracts • Transfer and protection of technology and confidential business information • Operating agreements and unitized operations • Environmental protection laws • Criminal and civil liability for oil spills • Indemnification and guaranty issues • Bribery laws • Marketing and transportation • Petroleum futures

Effective Materials Management – SC42

FOUNDATION 3-DAY

This three-day course covers practical considerations essential to achieve major improvements in planning, buying, storing, and disposing of the vast array of materials and spare parts needed to support any refinery, gas plant, onshore/offshore production, or other industry operations.

YOU WILL LEARN
• How to provide better customer service for long lead or critical materials and spare parts essential to the success of any well field operation, offshore platform, refinery, gas plant, or chemical processing facility
• How to establish the best methods of inventory analysis and create performance measures for min/max and order point systems
• How to use supplier stocking programs, consigned inventory, and integrated supply agreements
• How inventory systems use forecasting techniques and what can be done to improve them
• How to improve warehouse efficiency, layout, and space utilization for better inventory management
• How to improve inventory record accuracy and physical control of materials to lower inventory levels and increase space utilization
• Best practices used to manage surplus or inactive assets and increase investment recovery dollars

COURSE CONTENT
Setting comprehensive inventory goals and objectives • Understanding carrying costs and economic order quantity theory • Improving material identification and coding • Segmenting inventory for analysis • Using formal procedures for making the decision to stock • Determining safely stock levels and order points • Improving min/max systems and settings • Understanding and using material forecasts • Establishing a warehouse scorecard • Creating best practices in the physical control of materials • Measuring record accuracy and improving cycle counting systems • Increasing the use of warehouse technologies • Improving warehouse safety and security • Preventing and reducing surplus materials • Understanding investment recovery techniques • Using the disposition value chain for investment recovery

2018 Schedule and Tuition (USD)

2018 Schedule and Tuition (USD)

HOUSTON, US 12-14 NOV $3335

2018 Schedule and Tuition (USD)

HOUSTON, US 5-7 NOV $2790

2018 Schedule and Tuition (USD)


2018 Schedule and Tuition (USD)

HOUSTON, US 30-APR-4 MAY $4240

2018 Schedule and Tuition (USD)


2018 Schedule and Tuition (USD)

HOUSTON, US 5-7 NOV $2790

Any course is available inhouse at your location. Contact us today.
Inside Procurement in Oil and Gas – SC61

INTERMEDIATE 3-DAY

This course will expand the industry understanding of supply chain professionals and increase their value-added in a global, fast-changing environment. Participants will learn what each industry segment requires from procurement and be given insights to maximize value delivery and increase their contribution. The course includes an online, interactive forum with the instructor, and pre-read materials designed to familiarize course attendees with relevant issues. Attendees will leave better prepared to create and support procurement strategies that meet stakeholder needs, whether for projects or operations support.

DESIGNED FOR
Supply chain professionals with 2-7 years’ experience either inside or outside the oil and gas industry. This course is for anyone who needs a better understanding of procurement value creation in the oil and gas industry and includes buyers, procurement specialists, logistics specialists, business analysts, team leaders, project managers, commodity managers, materials managers, and new sourcing specialists or category managers.

YOU WILL LEARN
• How industry is structured, including host country and strategic relationships
• Business drivers and interface issues to be supported by procurement
• The role of industry economics in dictating procurement practices and cost management
• Industry global compliance needs and how procurement can add value
• How the industry is modeled in the E&P (upstream), midstream, and downstream value chains
• The E&P Asset Management Cycle and Total Cost of Ownership concepts
• Characteristics of supply markets to oil and gas and the emphasis on market intelligence practices and managing supply risks
• What constitutes effective procurement/supply chain metrics for performance improvement
• Procurement challenges unique to the industry

COURSE CONTENT
Industry overview for procurement including host country and strategic relationships • Key business drivers and interface issues between projects (CAPEX) and operations (OPEX) • Procurement’s role in oil and gas value chain management - upstream, midstream, and downstream • E&P asset management cycle and total cost of ownership • Economics of oil and gas that drive procurement value creation • Industry regulatory and contractor safety compliance issues • Industry market intelligence practices in procurement • Industry spend analysis characteristics and strategies • Creating industry category management (sector) strategies • Key procurement and supplier performance metrics • Trends in global sourcing and local content requirements and the impact on Oil and gas law and global contracting risks • Influence of eCommerce and eProcurement initiatives in oil and gas

2018 Schedule and Tuition (USD)
HOUSTON, US  27-29 AUG  $2890

2018 Schedule and Tuition (USD)
HOUSTON, US  8-10 OCT  $2890

Strategic Procurement and Supply Management in the Oil and Gas Industry – SC62

INTERMEDIATE 3-DAY

The development and implementation of carefully crafted strategies for the procurement of all goods, equipment, materials, and services has become a critical issue for all those in the oil and gas industry wishing to reduce operating cost while improving quality and productivity. This program explores key concepts forming the basis of strategic supply management, and moves today’s supply management organization from its typical tactical focus to the strategic focus needed to successfully implement the processes and methods needed to reach world-class performance.

DESIGNED FOR
Managers and professionals in supply management, procurement, purchasing, contracts, materials, inventory control, projects, maintenance, operations, finance, as well as other professionals interested in lowering total cost and increasing productivity and profit contributions from better supply management operations.

YOU WILL LEARN
• Stages to world class supply management • Skill sets in supply management • Organizing the spend profile • Greater ability in leading continuous improvement programs • Ways in dealing with economic uncertainties • Questions for internal surveys to enhance purchasing performance • How to develop a “Purchasing Coding System” • Steps in the development of a Composite Purchase Price Index • How to get more time to work on strategic issues • Negotiation planning and strategies • To understand the elements of cost that make up a supplier’s price • Categories in a purchased materials/services strategic plan outline

COURSE CONTENT
Stages to world class supply management • Change and becoming more strategic • Supply management skill sets • Defining supply management • Examples of job descriptions for supply management • Developing the spend profile • Creating time to be strategic • The ABC (cost) analysis and what to do with it • Material/services purchasing code development • Elements of cost that make up the price • Developing “should cost” • Producer price indexes • Requesting supplier’s cost and pricing data • Spotting opportunities with economic uncertainties • when, where, and how to use “Economic Price Adjustment” clauses • Internal surveys to improve purchasing performance • Total cost of ownership concepts • Cost containment methods • Cost reductions and cost avoidance • Savings reporting procedure • Developing purchased materials/services strategic plans • Developing the purchase price index for your organization • Negotiation skill sets • Steps in negotiation preparation • Positional negotiations • Final points before the negotiation

2018 Schedule and Tuition (USD)
HOUSTON, US  27-29 AUG  $2890

2018 Schedule and Tuition (USD)
HOUSTON, US  8-10 OCT  $2890

Supplier Relationship Management – SC63

INTERMEDIATE 2-DAY

Continuous improvement in all aspects of the supply chain is necessary to remain competitive in today’s global economy. The traditional adversarial relationship and transactional focus of buyers and suppliers cannot meet this demand for continuous improvement in lead-time, quality, and overall supplier performance. As a result, significant changes are occurring in the philosophies and approaches that define the relationship between purchasers and sellers in world-class organizations. Simply put, Supplier Relationship Management (SRM) and collaboration provide an organizational focus on communicating with suppliers on the many steps of the Supply Management process. This focus reduces the lead-time and total cost of acquisition, transportation, administration, and possession of goods and services for the benefit of both the buyer and seller, and as a result provides a competitive advantage and improved profits.

DESIGNED FOR
Managers and professionals involved in purchasing, projects, contracts, supply management, operations, maintenance, engineering, quality, and other activities that expose them to dealings with suppliers for goods, equipment, and services in the oil and gas industry.

YOU WILL LEARN
• The Supplier Relationship Management Maturity Model • Importance of SRM in continuous improvement • Critical steps in developing trust with suppliers • Supplier segmentation models • 8 Step Strategic Alliance Development • The difference between SRM and collaboration • Best practices in managing supplier relations • Key elements in improving the supplier relationship • Best practices in supplier qualification, measurement, and recognition • The importance of reengineering in SRM • Supplier risk management process

COURSE CONTENT
The organizational challenge • Defining the supply management mission and vision • Critical supply strategies • Defining Supplier Relationship Management (SRM) • The SRM Maturity Model • Major components of SRM • Defining levels of the organization’s SRM Maturity • Critical ABC analysis • Commodity and service coding • Segmentation of the supplier base • Defining the alliance • The alliance process • Success factors and barriers to alliances • Focusing on high value activities • Reengineering • Detailed mapping of processes • Developing the skills and defining the organization’s mission in building supplier relationships • Best practices for managing supplier relations • A survey for letting the supplier rate you • Maintaining good supplier performance • Who and what to measure • Monitoring supplier performance • Developing and maintaining a supplier performance index • Supplier recognition and expectations • Supply Risk and trends leading to greater risk • Typical risk management process

Cost/Price Analysis and Total Cost Concepts in Supply Management – SC64

INTERMEDIATE 3-DAY

Managing and reducing cost continues to be one of the primary focal points of PSCM in oil and gas today. In many organizations, more than half of the total revenue is spent on goods and services, everything from raw material to overnight mail. Maintaining a competitive position and even survival will depend on the organization’s ability to use all of the continuous improvement strategies that have been developed to reduce cost across the entire supply chain for the life of the product or service. Fundamental to developing and implementing these strategies is knowledge of cost/pricing analysis, value analysis, and total cost of ownership concepts. This course provides the concepts that are essential skill sets in developing and implementing the strategies required to achieve the high levels of cost reductions possible from the supply chain. SC64 is also available as a 5-day in-house course with expanded content.

DESIGNED FOR
Managers and professionals in purchasing, projects, contracts, and as well as those involved in operations, engineering, maintenance, quality, projects, and other companies that expose them to suppliers and buying services from the raw material to maintenance, equipment, MRO, services, and other outside purchased requirements.

YOU WILL LEARN
• Importance of cost/pricing analysis in continuous improvement programs • The difference between price and cost analysis • Methods of price analysis • How to manage volatile markets • Use of Producer Price Indexes • Methods of cost analysis • Development of “Should Cost” • Types of TCO models

COURSE CONTENT
Use of price indexes • Cost/pricing analysis • Total cost of ownership • RI/QT/ending as a price analysis tool • Cost estimating relationships • Purchasing savings impact on the bottom line • Developing the spend profile • Sources of spend data • How to perform the ABC analysis • Examples of using pivot tables in Excel for data mining • Continuous improvement skills sets • Difference between cost and price analysis • Selection tool • Methods of price analysis • Historical analysis • Developing company purchase price • Index methods of cost analysis • Major elements of cost • Requesting supplier cost info • Source of cost information • What and how important are supplier overheads • How much profit should the supplier make economically • Price adjustment clauses • Total costs of ownership models • How to combine price and performance to obtain TCO
### Project Management for Engineering and Construction – FPM22

**INTERMEDIATE 5-DAY**

Many petroleum projects fail to meet their authorized cost, schedule or operability targets. To be successful, today’s project leader needs a comprehensive set of technical, business and interpersonal skills. This course addresses those critical skills. Seasoned instructors tackle the issues and challenges found in concept selection, development planning, facility design, procurement, and construction activities. The specific training received in schedule and cost management, risk mitigation, and the proper use of scarce resources (people and materials) will help you make better decisions. Upon completion you will know how to improve engineering and service discipline work relations, use execution plans to integrate the work, and effectively employ cost and schedule control tools. This course is taught using a combination of instruction, facilitated discussion, and indepth exercises based on the instructor’s petroleum development successes and failures. The exercises will include both individual and group activities that provide you with a practical application of the principles and practices necessary to keep your project on track.

**DESIGNED FOR**

Project managers, facility engineers, construction representatives, schedulers, cost controllers, operations personnel, and supply chain specialists including team leaders and others who participate on or consult with multi-discipline development teams. This course is also suitable for business development, finance and land specialists as well as other non-engineering personnel who would benefit from an understanding of oil and gas project management.

**YOU WILL LEARN HOW TO**

- Define development stages and skillfully execute them
- Develop scopes of work and execution plans
- Utilize project control techniques and earned value analysis
- Develop engineering design checklists to ensure key deliverables for each phase are addressed
- Guide teams through technical reviews and secure needed approvals
- Measure progress during construction

**COURSE CONTENT**

Turnaround, Shutdown and Outage Management – TSOM

INTERMEDIATE  3-DAY

Scheduled turnarounds are difficult to manage. Managing a surprise shutdown or outage is like firefighting. Firefighters succeed because they know what strategies work and are highly trained to handle complex, risky situations. Uncertainty and complexity abound when a plant is down. Extra work can appear when equipment is opened and inspected. Integrating project work increases the challenge. Experienced instructors show you how to control scope uncertainty, tackle the complexity of integrating project work, and get the facility restarted. Upon completion you will know how to deploy scarce resources (time, people and materials) to complete work on time and within budget; utilize best practices in TSO planning, execution and closeout; and manage engineering, maintenance, operations and project interfaces. A blend of instruction, guided discussion, and hands-on exercises using real world examples makes the sessions thought provoking. The exercises will include both single and group activities.

DESIGNED FOR
Managers, supervisors, engineers, schedulers in maintenance, operations, reliability, HSE, procurement and projects should attend. This course also helps business, commercial, financial and other non-technical personnel who want to know more about turnaround, shutdown and outage best practices.

YOU WILL LEARN HOW TO
• Establish targets to ensure support from all facility stakeholders
• Develop a robust resource plan and get the resources you need
• Integrate scopes for both maintenance and projects
• Establish turnaround scope selection criteria early
• Select a computerized work system
• Address key outage constraints and operations interfaces
• Develop a robust contracting plan
• Prepare an execution plan
• Measure and control shutdown progress

COURSE CONTENT
Six-phases of turnaround, outage and shutdown management • Issues and challenges • Quality control • Health, safety and environmental planning • Computerized systems benefits and choices • Integrating the plan • Managing stakeholders and resources • Procurement and contracting • Tracking progress and controlling change

Advanced Project Management – FPM62

SPECIALIZED  5-DAY

Mega projects are complex. A program composed of these super projects is highly complex. For a very large project, addressing linked issues is key to improving the chances of success. In a larger program, these key issues interact producing unexpected results. Instructors will explore critical issues in contracting, decision making, and facility design. Interface control and risk reduction are examined. Non-technical problems in stakeholder relations, partner ventures, and approvals, are also tackled. Upon completion you will know how to deal with the program complexity and surprise effects, improve program strategies and deliver the projects on time; address both project and program resource concerns. Instruction, guided discussion, and in-depth work tasks based on the instructor’s petroleum experience are used. The work will include both single and group activities.

DESIGNED FOR
Experienced project and program personnel. Directors, managers, and team members in engineering, procurement and construction will benefit from attending. Project services personnel in the cost, schedule, contracts, procurement and quality functions are encouraged to attend. This five-day program is suitable for business, commercial, and finance and other non-engineers who want a greater awareness of mega project challenges.

YOU WILL LEARN HOW TO
• Improve complex decision making
• Develop contracts for prompt work completion
• Evaluate risks in technology and design
• Address key stakeholders needs
• Establish a process to manage critical interfaces
• Lessen the impact of risks on cost, schedule, and operations
• Navigate approvals challenges to advance your project

COURSE CONTENT
Key aspects of a stage-gate process • Effects of markets on contracting • How governance affects decision making • How limited resources affect technology and design • Advanced methods for influencing stakeholders • Challenges with partners • Critical factors in interface control • Risk methods that preserve mega project value • Managing peer reviews, assists, and approvals

Advanced Project Management II – FPM63

SPECIALIZED  5-DAY

This five-day, advanced level course for experienced project management professionals addresses the fundamental principles and techniques of project management and how to apply them to large international projects. This course will cover all the project phases, with hands-on content directly supported by practical case studies.

DESIGNED FOR
Experienced project managers, project engineers, project controls managers, and construction managers who are working on large international projects or about to start new assignments on international projects. Practical case studies will cover the entire spectrum of a large international project and will include offshore and onshore capital investment.

YOU WILL LEARN
• Why international projects fail and the early warning signs to look for
• The principles of project management that ensure project success
• How to build a strong and effective Project Management Team (PMT)
• How to identify and manage project stakeholders
• How to conduct business and yourself in the international arena
• How to select an effective contracting strategy and the appropriate negotiation style
• The practical approach for global engineering, procurement, logistics, fabrication, construction, and commissioning
• How to conduct project risk management throughout the entire project lifecycle
• How to apply effective leadership and strategy on your international project

COURSE CONTENT
Why projects fail • Project Management principles (PMT, scope, cost, schedule, safety, and quality) • Stakeholders management on international projects • Host country - business and culture contracting • Strategies and negotiations • Global engineering - from concept through detailed design procurement and logistics • Fabrication, construction and commissioning • International project risk management • Leadership and strategy

Advanced Project Management Workshop – APMW

SPECIALIZED  3-Day

This course will not follow the traditional lecture-style format, instead it will be an interactive hands-on workshop where the participants will work on several case-studies directly related to the selected topics. This workshop will take an EPC contractor perspective while also highlighting how Owner companies (NOCs & IOCs) interact with their EPC contractors to develop and execute their projects. The workshop material covers both onshore and offshore projects. The main objective of this workshop is to present several real-life scenarios of different types of project issues encountered by contractors and work through these issues to show how they should be addressed to arrive at an optimum resolution. This workshop will focus more on practice and less on theory. In addition to the case studies created and provided by PetroSkills, it is recommended that attendees provide a few scenarios from their current or past projects to be used in the workshop as case studies.

DESIGNED FOR
This course is designed for senior project management staff of EPC contractors working on large international projects in the energy industry with a focus on the Middle East Region. It is recommended for experienced project managers, project engineers, project controls managers, construction managers and discipline leads.

YOU WILL LEARN HOW TO
• Allocate contract risk between owner and contractor
• Address terms and conditions at bidding stage
• Handle owner-provided FEED as basis of bid
• Finalize terms and conditions before contract signing, contract administration, and records keeping
• Understand and negotiate liquidated damages applied to project milestones
• Handle change orders, suspension of work by owner or contractor, and contract termination for cause or convenience
• Prepare for dispute resolution and claim by contractor
• Determine when negotiation, mediation, arbitration, and litigation are necessary
• Identify governing laws in the contract
• Determine cost of claims and who is responsible for payment
• Protect yourself from claims by owner against contractor
• Prevent claims where possible
• Identify project risks and determine their impact during engineering, procurement and construction phases
• Apply risk management on a project at the right time
• Identify, assess, and mitigate project risks
• and much more...

COURSE CONTENT
Why projects fail • EPC contracts • Dispute resolution and claims • EPC risk management • Scope changes • Cost and schedule management • Project planning and execution • Working with owner (client) and their PMC

Any course is available inhouse at your location. Contact us today.

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Managing and Leading Others – MLO

**FOUNDATION**

3-DAY

Why would any company expend hundreds of thousands of dollars to seek, recruit, and hire the best employees then leave their development and performance to luck? Any chance through ineffective leadership and management practices? Unfortunately, that chance occurs every time an employee is promoted to a leadership, supervisory, or management position without training in the techniques and practices of effective leadership and management. Managers and supervisors, regardless of technical expertise, can make an error setting off an uncontrolled and disastrous chain reaction without training in these skills. Leadership and management skill sets are different (not the same) in almost any other organ of any other single entity in the organization. This course increases the confidence and productivity of leaders, supervisors, and managers who may be scientific or technical specialists, but have minimal training in the science and art of leading others. Skills in human relations, communication, motivation, and leadership are essential tools for the supervisor and manager. This interactive learning program will assist you in expanding your options for leading others. You will explore the different concepts of management and leadership and how to apply your new skills in real world applications.

**DESIGNED FOR**

Anyone responsible for leading others in the daily performance of a work, including soon to be leaders, front-line leaders, new and experienced supervisors and managers, team leaders, coaches, and mentors.

**YOU WILL LEARN HOW TO**

- Apply concepts of leadership and management to real work situations
- Coach and supervise a diverse and dispersed workforce
- Set appropriate goals and manage performance and change to ensure these goals are reached
- Empower your workforce to exceed expectations
- Develop effective communication skills

**COURSE CONTENT**

The role and function of the leader, supervisor, and manager • Understanding and applying essential behavioral management concepts • Understanding and increasing employee motivation • Understanding and applying leadership concepts • Effectively supervising a diverse workforce • Basic skills in interpersonal communications • Performance management • Coaching • Working with difficult employees • Goal setting • Empowering subordinates • Creating positive and functional thinking about work • Making ongoing change for growth and improvement • Taking personal responsibility • Developing personal plans to improve team effectiveness

**2018 Schedule and Tuition (USD)**

**DENVER, US**

- 6-8 AUG
- 28-30 OCT
- 5-7 NOV

- $1600
- $1990
- $3695+VAT

**2018 Schedule and Tuition (USD)**

**DELR MU**

- 9-11 AUG
- 31 OCT-1 NOV
- 8-9 NOV

- $1515
- $1985
- $3195+VAT

**Orlando, US**

- 23-27 APR
- 3-7 DEC

- $1400
- $1990

**Houston, US**

- 22-26 AUG

- $1900

Any course is available inhouse at your location. Contact us today.

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Team Leadership – TLS

**FOUNDATION**

2-DAY

This program will develop and refine the skills essential for leading a high performance team. Emphasis is placed on the leader’s role in effectively enhancing total team functionality and maximum team productivity. Individual communication styles will be assessed and examined to identify the most appropriate communication style to use with your team. This will be an active experience. In addition to receiving individual assessment information, participants will be exposed to team concepts, theories, and skill development through the use of lectures, videos, readings, role plays, case studies, and discussions. This course has been constructed to maximize opportunity to improve both knowledge and practical skills in leading a team and being a team player. (This is a great course to attend immediately following PetroSkills’ course titled: Leading and Managing Others.) In addition to this program designed specifically for Team Leaders, PetroSkills has a 2-day course titled: Team Building for intact teams.

**DESIGNED FOR**

Team leaders, supervisors, managers, and others responsible for leading a team and interested in establishing and/or being a part of a highly productive team.

**YOU WILL LEARN HOW TO**

- Characterize high performance teams
- Gain clarity of goal and worthwhileness
- Develop a team charter
- Gain commitment
- Build team collaboration and trust
- Establish operational norms
- Recognize stages of team development
- Define team roles and relationships
- Understand system influences
- Promote conditions for effective team building
- Conduct individual and team assessments
- Improve team communications
- Improve team dynamics
- Develop personal plans to improve team effectiveness
- Foster team leadership
- Monitor team progress

**COURSE CONTENT**

Definition and purpose of teams • Characteristics of a high performance team • Gaining clarity of goal and worthwhileness • Developing a team charter • Gaining commitment • Team collaboration and trust • Establishing operational norms • Recognize stages of team development • Define team roles and relationships • Understand system influences • Conditions for effective team building • Individual and team assessments • Improve team communications • Improve team dynamics • Developing a personal team leadership plan • Monitoring team progress • Developing a team leadership action plan

**2018 Schedule and Tuition (USD)**

**DENVER, US**

- 6-8 AUG
- 28-30 OCT
- 5-7 NOV

- $1160
- $1290
- $3695+VAT

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- $1990

**Houston, US**

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Essential Leadership Skills for Technical Professionals – OM23

**BASIC**

5-DAY

In the oil and gas industry, skillful and competent leadership is extremely important for safety, productivity, and asset management. The 21st century brings new emphasis on leaders, new communication technologies, increased focus on safety, information overload, workforce dynamics, asset integrity, and many other concerns which challenge even the most proficient leader/manager. How do we blend these new challenges with tried and true wisdom of success? There are skills to learn that will help you be more effective, with less stress. In this seminar/workshop you will explore your internal drivers and team how to combine them with new skills to improve effectiveness. This seminar/workshop will include self-assessment, discussions, lectures, readings, role-playing, games, video examples, and creation of participant action plans. This course will help you unleash natural motivation in your team. Your stress level can be lowered by working more efficiently and effectively by tapping the emotional intelligence of your team and co-workers.

**DESIGNED FOR**

Anyone who has new responsibilities to lead a team. Supervisors, team leads, managers, and others interested in becoming a better leader and a contributing team member will greatly benefit from this one-week experience. Many may want to take this seminar/workshop more than once for continuous improvement.

**YOU WILL LEARN HOW TO**

- Become a more effective leader by overcoming the “tyranny of the urgent” with better time management
- Make better decisions by assessing when to make what kind of decisions
- Help others develop themselves by unleashing their career motivation
- Have more effective communications with technical and non-technical teams by developing the patience to let the team do its work
- Recognize and resolve conflicts before they get out of control by early detection of conflicts, when they’re simpler and have less impact
- Develop the ability to lead an empowered team of technical professionals by more effective delegation
- Reduce your own stress level by teaching yourself how to lower your stress with clear thinking
- Learn assessment techniques for yours and other people’s skills by raising the competency levels of yourself and your team
- Walk your talk by getting buy-in for your ideas and vision
- Leading by example

**COURSE CONTENT**

The nature of teams • Leadership vs. management • Self-centering and tangential dynamics • Listening • Motivation • Group dynamics • Conflict management • Team building • Critical thinking and taking action

**2018 Schedule and Tuition (USD)**

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Essential Technical Writing Skills – ETWS

**BASIC**

3-DAY

Writing for work-related purposes ought to be brief, clear, informative and, above all, readable. In this practical hands-on course, you gain a solid foundation in technical writing skills. The primary theme for the course is that a writer must “think constantly about their readers.” Examples and exercises provide hands-on experience. You may choose to bring a sample of your writing for one-on-one feedback.

**DESIGNED FOR**

All engineers, managers, IT/computer support staff, team leaders, supervisors, and individuals responsible for writing letters, memos, reports, procedures, test results, and proposals that are clear, concise, and professional.

**YOU WILL LEARN HOW TO**

- To focus on the reader as the receiver of the information
- To develop quality writing that will: • Improve business relationships and communication
• Enable you to write better and faster
• Make your writing more credible
• Make you more confident in your writing

**COURSE CONTENT**

Develop essential technical writing skills to convey a convincing message • Compose clear messages using a structured writing approach • Adapt your writing style to your audience’s needs • Edit at the word level to improve persuasiveness and impact • Write precise and concise memos, letters, summaries, and reports • How to best display visual information • Create informative content using lists, bullets, and short paragraphs as the primary writing mode

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Negotiation Skills for the Petroleum Industry
– NSPI

BASIC 3-DAY
This course helps you to develop strong interpersonal skills in the art and science of negotiation. You will learn to apply these skills to complex organizational issues and individual needs. The course includes Negotiating Style Profile self-assessment to determine your preferred negotiation style(s). Various tools and techniques are used to negotiate differences and disagreements to produce positive results. A group workshop conducting a collaborative negotiation, allows attendees to engage in, comment on, and improve their competencies in negotiation skills.

DESIGNED FOR
Petroleum industry personnel who are responsible for negotiating the best possible terms of an agreement in public and private sectors and those negotiating resources and deliverables in projects and programs.

YOU WILL LEARN HOW TO
• Follow a step-by-step method to the structure, techniques, and approaches available to positively influence an effective negotiation
• Adapt negotiation at each stage of the negotiation
• Leverage the power of Best Alternative To A Negotiated Agreement (BATNA), Worst Alternative To a Negotiated Agreement (WATNA), Zone of Possible Agreement (ZOPA), and Walk Away Price (WAP)
• Modify your communication style to achieve desired results
• Respond to tough negotiators
• Select a strategy for your negotiation
• Use the Agree, Bargain, Control or Delay (ABCD) method
• Practice your negotiation skills in real world practice sessions
• Apply what you’ve learned to plan a negotiation back on the job using the Strengths, Weaknesses, Opportunities, and Threats (SWOT) model

COURSE CONTENT
Learn a step-by-step method to the structure, techniques, and approaches available to positively influence an effective negotiation • Know what behavior to adapt at each stage of the negotiation • Leverage the power of Best Alternative To A Negotiated Agreement (BATNA), Worst Alternative To a Negotiated Agreement (WATNA), and Walk Away Price (WAP) • Adjust your communication style to achieve desired results • Deal with tough negotiators • Craft a strategy for your negotiation • Use the Agree, Bargain, Control or Delay (ABCD) method • Practice your negotiation skills in real world activities • Apply what you’ve learned to plan a negotiation back on the job.

Foundation 2-DAY
This workshop is most effective when attended by an entire team. Team members will develop and refine the skills essential for high performance teams. Emphasis is placed on learning more effective ways to enhance total team functionality and maximum team productivity. Individual communication styles will be assessed and examined to identify the most appropriate uses of team strengths. This will be an active experience. In addition to receiving individual assessment information, participants will be exposed to team concepts, theories, and skill development through the use of a variety of learning techniques. This course has been constructed to maximize opportunity for intact teams to strengthen team performance and team productively.

Designed for
Any intact team interested in becoming a stronger and more productive team, such as project teams, leadership teams, cross-functional teams, production teams, quality improvement teams, etc.

You will learn how to
• Characterize high performance teams
• Ensure that your team has clarity of goal and worthiness
• Jointly develop a team charter
• Gain commitment of all members
• Build team collaboration and trust
• Establish and follow group operational norms
• Work through the stages of team development
• Define team roles and relationships
• Understand system influences
• Promote conditions for effective team building
• Conduct individual and team assessments
• Improve team communications
• Improve group norms
• Solve problem in teams
• Develop a team plan to improve team effectiveness
• Lead when necessary
• Monitor team progress

Course content
Purpose of teams • Characteristics of a high performance team • Gaining clarity of goal and worthiness • Developing a team charter • Gaining commitment • Team collaboration and trust • Establishing group operational norms • Working through the stages of team development • Effective team roles and relationships • Dealing with system influences • Conditions for effective team building • Individual and team assessments • Team communications • Group dynamics • Problem solving in teams • Developing personal plans to improve team effectiveness • Taking the lead • Effective team meetings • Monitoring team progress

Presentation Skills for the Petroleum Industry
– PSPI

Foundation 3-DAY
One of the prime requisites for oil and gas professionals is to be able to deliver presentations in as clear, concise, and well-designed a way as possible. Some industry technical professionals are naturally gifted designer/speaker/presenters, others are not. However, with the proper training and practice any oil and gas professional can learn to make a convincing and persuasive presentation, and do so in a confident, assured, comfortable, and relaxed manner. This course is for individuals who are required, as part of their jobs, to deliver presentations in-house or in public, and who wish to perfect the art and craft of presentation-making in order to do so. Participants will participate in a full array of hands-on class exercises to improve presentation-making skills, vocal techniques, social interaction skills, visual aid preparation, etc. Attendees will deliver two presentations in class, both of which will be videotaped to measure improvement, and will discuss their performances in one-on-one private conversations with the instructor at the end of the course. Participants’ progress will also be charted to quantifiably show areas in which actual improvement has taken place.

Designed for
Industry personnel who wish to acquire the presentation skills and techniques needed to design and deliver technical material clearly, confidently, and convincingly either face-to-face or online.

You will learn how to
• Design and deliver a presentation both in person and on-line
• Keep an audience engaged through use of various delivery methods
• Appropriately use technology and visual aids
• Speak confidently in front of groups

Course content
Communication and the role it plays in presentation-making • Overcoming fears • The similarities and differences between face-to-face and on-line presentations • The four fundamental basics to effective presentation-making: Presence/demeanor/appearance: posture, movement, and physical comfort • Delivery: the voice, gestures/facial expressions, skill in using silence, rhythm, and language • Production: flow/rhythm, skill in using visual aids/technology, skill in using time, skill in listening/observing/questioning, skill in using the venue, connectivity, eye contact, knowledge of audience, and skill in handling audience/ pitfalls • Constructing presentation: design (presentation), design (PowerPoint slides/other visuals), and integration (presentation with visuals)

Making Change Happen: People and Process
– MCPP

Intermediate 2-DAY
Attendees will work in teams to overcome the problems encountered when making changes in their organizations. You will also learn how to develop the ability to effectively handle organizational changes by examining an eight-step change process and understanding your own, and others, needs and responses to each step in the change process. A group workshop allows attendees to engage in, comment on, and improve their competencies in managing change.

You will learn how to
• Facilitate individual and group behavior exhibited during change
• Improve individual and team dynamics for high performance
• Apply the GROW model to coach and sustain individuals undergoing organizational change
• Design a practical framework for positive engagement with organizational change

Course content
Explore the characteristics of change • Build an integrated change strategy • Embrace change positively using the power of vision • Use people and process to make change happen • Craft an effective measurement process to evaluate change • Facilitate change and overcome resistance through effective communication

2018 Schedule and Tuition (USD)
HOUSTON, US 16-17 AUG 2018 $2565

Meeting Management and Facilitation for the Petroleum Industry
– MMF

Foundation 2-DAY
Properly planned and managed, meetings are extremely powerful and dynamic ways to change ideas, shape policy, resolve problems, effect change, etc. However, when poorly designed and implemented, meetings become virtual breeding grounds for confusion, tension, frustration, boredom, and negativity. During this interactive session, participants will learn how to perfect meeting facilitation skills; master meeting agenda design skills; and polish meeting communication skills so that they’ll be able to run meetings efficiently, effectively, and smoothly.

You will learn how to
• Run efficient face-to-face and online meetings
• Prepare and implement meeting agendas
• Incorporate meeting facilitation techniques and tools
• Understand meeting roles and responsibilities
• Use meeting facilitation tools
• Master meeting management skills, i.e., use time wisely, avoid topic confusion, handle personal attacks, avoid traffic problems, deal with individual and group communication, and maintain topic (agenda) focus
• Recognize and understand the various roles that a facilitator plays during the course of a meeting

2018 Schedule and Tuition (USD)
HOUSTON, US 23-25 JUL $3165

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See website for dates and locations

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Overview of the Petroleum Industry – OVP

BASIC  2-DAY

OVP presents an overview of the Petroleum Industry from the point of view of the Asset Life Cycle. Participants will gain an understanding of Exploration, Appraisal, Development and Production phases with particular emphasis being placed on actions they can personally take within each phase to support value creation. Through use of lecture, multimedia and class interactive exercises, a breadth of upstream business acumen will be delivered covering economic, business, geoscience and engineering topics. Discussions will include topics related to all types of resource plays including deepwater, shale oil/gas and enhanced oil recovery technologies.

DESIGNED FOR
Both technical and business oriented professionals who are either new to the upstream oil and gas industry or experienced in one part, but could benefit from a wider point of view. OVP will likewise deliver for non-industry personnel a broad, basic knowledge set of multi-faceted E&P topics. Legal, Financial, Accounting, Management, and Service Company team members will certainly benefit.

YOU WILL LEARN
• The critical importance the industry plays on the world’s economic stage, including discussions of pricing, global reserves and key short/long-term energy trends.
• Business and exploration elements critical to the success of organizations in search of new reserves
• Methods by which new field prospects are evaluated and risk factors assessed (Geology, Geophysics, Petrophysics)
• How exploration rights are acquired (Land themes, International Concessions)
• The basic process for drilling and evaluating an exploration well (Drilling, Petrophysics, Testing)
• Major steps required to appraise a new discovery and estimate its commerciality (Reservoir Engineering)
• Strategies to maximize the value of an oil or gas field asset
• How geology and reservoir management plans are used to guide new field development
• Major steps in the design, construction, and commissioning of facilities
• Basic technical and operational steps required to produce an oil or gas field (Production Engineering)
• Types of opportunities to optimize older fields and increase production

COURSE CONTENT
The business of E&P • Hydrocarbon origin • Exploration – acquisition of exploration/development rights • Exploration – prospect generation and evaluation • Appraisal – asset characterization and reserve quantification • Development – drilling, completion, and facilities • Produz Assit – recovery optimization strategies

Basic Petroleum Technology Principles – BPTP

BASIC  20 HOURS

PetroSkills’ PetroAcademy

BLENDED LEARNING

This course will be delivered virtually through PetroAcademy providing participants with the knowledge they need at their convenience.

This course provides the participant with an understanding of basic petroleum technology in the context of the Petroleum Value Chain, from exploration to abandonment. The participant will understand how and when geoscience and engineering professionals use technology to find, then determine and optimize the economic value of an oil and gas field. This enables the participant to maximize their professional and administrative contribution in their organization.

DESIGNED FOR
Those who need to achieve a context and understanding of E&P technologies, and the role of technical departments in oil and gas operations. An understanding and use of oilfield terminology is developed.

YOU WILL LEARN
• Historical petroleum occurrences and usage
• The objectives and processes of the exploration phase of the E&P asset life cycle
• The objectives, processes, and economic metrics of the appraisal phase of the E&P asset life cycle
• Basic reserves and production value concepts
• The Earth’s structure, continental drift, and plate tectonics role in oil and gas exploration
• Rock types and classification in an oil and gas context
• About oil and gas reservoirs, both conventional and unconventional, and more...

COURSE CONTENT
E&P Industry and asset life cycle • Petroleum geology • Hydrocarbon reservoirs • Rock and fluid properties • Surface/subsurface exploration • Drilling operations and well completions • Production operations

2018 Schedule and Tuition (USD)

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<td>17-18 SEP</td>
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For More Information, Visit: petroskills.com/virtualbptp

Basic Petroleum Technology – BPT

BASIC  5-DAY

This course provides the participant with an understanding of basic petroleum technology in the context of the Petroleum Value Chain and Asset Management, from exploration to abandonment. Unconventional shale (tight oil and gas) and conventional oil and gas are covered. The participant will understand how and when geoscience and engineering professionals use technology to determine and optimize the economic value of an oil and gas field. This enables the participant to maximize their professional and administrative contribution in their organization. Participants first learn and understand why various global oil and gas production types and plays (unconventional and conventional) have different value. The participant learns which technologies are used by the geoscience and engineering departments during each stage of the asset life cycle and why! This E&P lifecycle context accelerates an understanding of basic petroleum technologies and the oil industry. This learning is achieved through guided discussions, animations, and progressive team exercises utilizing ‘Our Reservoir’ and ‘Our Well’ as working models.

DESIGNED FOR
This course is appropriate for those who need to achieve a context and understanding of E&P technologies in conventional & unconventional fields, and/or the role of technical departments in oil and gas operations, and/or be able to understand and use the language of the oilfield.

YOU WILL LEARN
• The E&P Process and how it differs in conventional vs unconventional plays, the role of each technical department and specialist, and the technologies used
• The economic value and properties of reservoir fluids
• Petroleum geology for exploration and production
• About oil and gas reservoirs, both conventional and unconventional, and understand the key differences
• Exploration and appraisal technologies
• Drilling operations for exploration, development and production
• Production - well completions and production technology
• Reservoir recovery mechanisms through primary, secondary, and tertiary recovery
• Surface processing of produced fluids

COURSE CONTENT
World hydrocarbon production and consumption review including reserves, benchmarks, and the impact of shale resources. Reservoir fluid properties • Petroleum geology • The petroleum reservoir, conventional and unconventional • Exploration technologies for conventional and unconventional reservoirs including initial reserve estimation and consequential field development • Drilling and operations • Well completions and workovers • Production operations • Reservoir recovery mechanisms • Surface processing

2018 Schedule and Tuition (USD)

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MR. STEPHEN ASBURY is the author of six internationally published books on safety and risk management and a highly experienced HSE practitioner and instructor. He is a Chartered Safety and Health Practitioner (CFIOSH), a Chartered Environmentalist (CEnv, FIEMA), and a Professional Member Emeritus of the American Society of Safety Engineers. Awarded the IOSH President’s Distinguished Service award in 2010, Stephen is an experienced instructor (2007-present) on our safety and HSE management programs. He has over 30 years’ risk management experience gained working in leading organisations, in consultancy, and in the London insurance market, where together with his business partner, he worked in over 30 countries on six continents. Stephen is a former member of the IOSH Council of Management (1998-2013), and three-times chair of its Professional Committee. Outside of PetroSkills, he is a director of AISafe Group Limited, a leading international HSE consultancy. In addition to being the author of 40 technical papers and journal articles. He was awarded an MBA with Distinction (Leicester, 1995), and is presently completing a PhD (London). His first qualification was in law.

DR. FRANK ASHFORD has over 50 years’ experience in oil and gas reservoir engineering, downhole and surface design and operations, as well as oil and gas conditioning and producing facilities. He has been with PetroSkills since 1988 and has worked extensively in most energy producing countries. He provides instruction fluently in English, Spanish, or Portuguese. He worked with Gulf Research (GR&DC) in Houston, Texas where he developed many reservoir engineering laboratory techniques for the determination of applicable oil/gas/water relative permeability correlations, and choke performance prediction techniques still in application today. Dr. Ashford was a Professor of Petroleum and Natural Gas Engineering at the Central University of Venezuela in Caracas, where he taught courses in natural gas engineering technology. He was a founder of the Petroleum Engineering Department in INPANPV (responsible for the petroleum engineering program in Venezuela), was a participant in the initial gas field kick-off operations held in Venezuela, and developed many field, and numerical techniques and correlations for downhole, and surface choke performance with Otis Engineering (US, and Venezuela), and Comapa Shell de Venezuela (CSV). He has authored technical articles published in World Oil, JPT, SPE, IEE, Pub., PDVSA, Pacific Oil World, AAPG, SPECAL, and GPA. He holds a BS (1961) and MS (1963) in Petroleum Engineering and a PhD in Engineering Sciences (1970) from the University of Oklahoma. He was one of Dr. John M. Campbell’s graduate students from 1962-1968, and participated in the initial data collection and organization for the original John M. Campbell technical textbooks Gas Conditioning and Processing, Volumes I and II.

DR. OMAR BARKAT is a registered and licensed Professional Engineer and the Executive Director for Upstream Operations with PetroProTech. He has been a training specialist and technical consultant for OGHi-PetrolSkills since 1997. He has over 28 years of combined industrial and academic experience in the USA, North Africa and Europe. He has been an active international oil and gas consulting engineer since 1993 involved in projects related to surface production operations, upstream facilities, field development, oil and gas production systems performance optimization, equipment selection, petroleum fluids treating and processing and fluids disposal management. From 1983 to 1993, he worked in the oil and gas production technical issues and led research and development projects in areas such as: cement stingers, hydraulic fracturing fluids, propant transport, emulsions, drilling muds, formation damage, cutting transport, H₂S/CO₂ corrosion, fluid flow and rheology, drag and pore pressure reducing agents and petroleum processing. He has published over 50 original technical papers, several short courses, seminars and lectures in a variety of oil and gas topics throughout the world. He is a former tenured university professor in Louisiana and Oklahoma, a current member of several international societies including SPE, AICHE, ACS and ASSE, and a member of the US National Engineering Honor Society Tau Beta Pi. He is an invited Adjunct Professor of Petroleum Engineering at the University of Tulsa and a member of its Industrial Advisory Board. He is the author of numerous technical publications, the recipient of several professorships, research, teaching and merit awards and listed in the Who’s Who in Science and Engineering. He received a Chemical Engineering State Diploma from the National Polytechnic School of Algiers, an MS and a PhD from the University of Tulsa.

MR. PAUL M. BARRY is a petroleum engineering consultant specializing in production technology, production operations, and project evaluations. Mr. Barry has over 42 years of international and domestic experience in upstream oil and gas, production and reservoir engineering and management experience in conventional and unconventional reservoir development. Assignments include working and residing in South America, SE Asia, the Middle East, the North Sea region, and the USA. Earlier experience included as field production engineer and field production engineering manager of an onshore oilfield re-development project for PDVSA and partners in Venezuela which required a combined new development well and well re-completion designs for gas lift, submersible pump, and rod pump artificial lift technology, and frac pack and gravel pack sand control techniques. Previous Indonesia experience was in the design and completion of dual string, multiple selective, underbalanced, tubing conveyed perforated high pressure gas wells, exploration well testing and evaluation for Pertamina and Atlantic Richfield, Hults, Virginia Indonedia, and joint venture contract partners for both oil operations and Bontang LNG gas supply operations. As district reservoir engineer for Pertamina and Arco partners in Indonesia, Mr. Barry was responsible for the plan of development and reserves determination and certification for a 1.2 TCF offshore gas field. He has also worked as field engineer in Saudi Arabia, responsible for a 1.2 MMMBD reservoir pressure support injection well system, injection water quality assurance, producing well workover, frac pack completions, internal and external well and flowline corrosion control systems, and, as Mobil Oil field engineer in the Arabian American Oil Company (Araco) Gas Projects department, technical and commercial interests in both UK and Norwegian North Sea sectors oil and gas producing fields. Mr. Barry has served as an officer in the Jakarta and Dubai SPE sections. He holds a BSCE from the University of Notre Dame and an MSCE from Marquette University, and is a registered Professional Engineer in Colorado, USA.

MR. DON BEESLEY has over 38 years of management, engineering, and operations experience in the oil and gas industry – virtually all on the Gulf of Mexico projects, including subsea systems, floating systems and fixed platforms. He has worked for operators Eni, Shell and Texaco, and has held management positions including Project Development Manager and Production Manager. Mr. Beesley has been a member of industry groups Deep Water Underwater Pipeline Emergencies (DW UPE) and Subsea Tieback Forum (SSTB). He earned his B.S. in Civil Engineering from Auburn University, and is a registered professional engineer in the states of Texas and Louisiana.

MR. ROBI BENDORF is an expert in procurement, supply chain management, and contract management with over 31 years’ experience in the oil and gas sector and petrochemicals industry. He has extensive experience in analyzing, managing, and selecting suppliers and contractors. He has managed projects in over 30 countries and across a wide range of disciplines. He has authored several papers and presentations on procurement and supply chain management. He is a member of several professional organizations and has served on numerous boards and committees in the industry. He has also taught procurement and supply chain management courses at universities and other institutions.

MR. JOHN C. BOURDON has over 30 years’ experience in the oil and gas industry. He has been involved in the development and implementation of various oil and gas projects in different parts of the world. He has managed several large projects, including offshore developments and onshore facilities. He is a member of several professional organizations and has served on numerous boards and committees in the industry. He has also taught procurement and supply chain management courses at universities and other institutions.

MR. ROBERT BOMBARDIERI has over 30 years’ experience in the oil and gas industry. He has held various senior management positions, including as a Vice President of a major international oil company. He has been involved in the development and implementation of various oil and gas projects in different parts of the world. He is a member of several professional organizations and has served on numerous boards and committees in the industry. He has also taught procurement and supply chain management courses at universities and other institutions.

MR. MARK BOTHAMLEY is a petroleum engineering consultant who has over 25 years’ experience in the oil and gas industry. He has worked in various parts of the world, including the UK, USA, Canada, and several countries in South America. He has been involved in the design and implementation of various oil and gas projects, including onshore and offshore developments. He is a member of several professional organizations and has served on numerous boards and committees in the industry. He has also taught procurement and supply chain management courses at universities and other institutions.
**MR. RONALD FREND** is a registered engineer, and has extensive experience in the oil and gas sector. He rose to a senior position in Shell International (Middle East) before opening a worldwide engineering consultancy based in England and a senior position in a global training enterprise. His entire career has been concerned with practical applications of marine technology. He has authored and edited a number of books and publications.

**MR. RICHARD (RICK) GENTGES** has over 36 years experience in the design, construction, and operation of underground natural gas storage facilities. His experience includes assignments in operations, technical support, engineering management, and project management. Most recently (2010-2012) he served as Senior Project Manager for Cook Inlet Natural Storage Alaska, LLC, and was responsible for overall construction of the first commercial underground gas storage facility in Alaska. From 1982-2010 he worked on ANR Pipeline Company where he held various technical and managerial positions involving gas storage assets. His technical experience includes performing and analyzing well tests, reservoir performance analysis, reservoir simulation, and overall storage facility optimization. During his career he has managed construction procurement and equipment procurement for gas storage facilities and construction of new gas storage facilities. The scope of construction included the drilling and completion of vertical and horizontal wells, upgrades to gathering systems, new compression, and gas processing equipment. Mr. Gentges is a past Chairman of the Underground Gas Storage Committee of the American Gas Association (1994). He also served as Chairman of the Underground Gas Storage Research Committee for the Pipeline Research Council International (1998-2003), and served on the National Petroleum Council Gas Storage Team (2003-2004). Mr. Gentges holds a BS in Chemical Engineering from the University of Michigan.

**MR. ANDY GIBBINS** is an experienced and highly motivated oil and gas petrochemicals consultant, with experience in upstream and downstream. Andy worked for many years in Operations Management and Technical positions with Shell and NOVAX and has significant experience in Operational Excellence and Process Safety. He has excellent planning, organizational, project and people skills, resulting in effective project coordination and successful achievement of business improvement goals. Andy has excellent interpersonal, communication and presentation skills, is diplomatic, with the ability to influence at all levels within an organization. Andy has extensive experience in project management. Andy has over 20 years of industrial experience and 12 years of consultancy and training experience in safety and leadership, project and change management. He holds a BEng (Hons) in Chemical Engineering from University of Bradford, UK.

**MR. DAN GIBSON** is a consulting engineer with over 35 years of experience in production, completions, and well integrity issues from oil and gas fields around the world. Andy worked for several years in the North Sea, through college, he started his professional life as a field engineer in Alaska. He has worked his way through the value stream from facilities to completions, with jobs in Anchorage, Denver, Houston, Gabon, Congo, Egypt, Scotland, Russia, and Australia. He is currently a consulting engineer, working on completions and well integrity problems for a wide range of independents and majors. He has worked as a Wells Technical Advisor for a large international operator with a varied portfolio of offshore oil and gas operations. He has extensive experience in drilling, construction, risk management and project controls. He has been managing large projects for over 25 years. Andy has a degree in Chemical Engineering from the University of Alaska, Anchorage. His teaching style focuses on first principles, and an understanding of why things happen which then dictates an appropriate response.

**MR. JOSH GILAD**, P.E., has 40 years of domestic and international experience in the engineering, analysis, inspection, troubleshooting, forensic investigation and expert witness for marine liquid bulk terminals (oil, crudes, products) and gas (LNG, LPG), cargo handling and storage facilities, prime movers, piping and pipelines. His experience includes pipeline flow and hydraulic transient analysis, pipe stress analysis, pipeline on-bottom stability, pipeline integrity & fitness for service assessment. Throughout his years with Brown & Root (now KBR), Han-Patron Associates (now CH2M-Hill), and as an independent consultant, Mr. Gilad has been involved in the design and installation of numerous single point mooring (SPM) systems and other offshore terminal projects. He has written and contributed to several technical papers and has completed numerous projects in Europe, Alaska, Middle East, and Africa.

**MR. MARTYN GRANT** is an experienced health, safety and environment subject matter expert with a history of military service in both the Royal Marines and Royal Electrical Mechanical Engineers. During his service, he was promoted to Warrant Officer Class 1 and then received the Queen’s commission, retiring as a Major. On leaving the military, he worked for two police forces as their Health, Safety and Environment Manager. Since 2013, he has been Head of Distance Learning at Corporate Risk Systems Limited. Martyn is a Chartered Fellow of IOSH (CFOSH), and an Associate of IEA (AEMIA). He is experienced in all aspects of people management especially mentoring, training design, development and delivery.

**MR. GERALD GUIDROZ** started out as a vibration test engineer for the space shuttle main engines. He then moved into the oil and gas industry on the North Slope in the production side of the business. He worked as a rotating equipment engineer for several years as well as getting involved with offshore engineering. He is working on gas and gas lift projects before moving over to the pipeline side of the business. He was able to transfer some of his vibration experience into solving complex piping and equipment problems. Mr. Guidroz worked with the Trans-Alaska pipeline on pipeline and tank equipment. He has been involved with construction tendering and construction supervisor at the Valdez Marine terminal. He then transferred to the refinery side of the business working for multiple clients as an engineering consultant. He has been involved with major refinery upgrades, multiple turnarounds and greenfield projects. He has acted as owner’s engineer on projects including a new LNG plant for the State of Qatar. Mr. Guidroz has been involved with all phases of projects from FEED/Conceptual Design to Detailed Design through construction. His areas of expertise are in piping specification and design, welding, pressure vessels, heat exchangers, feed heaters, pumps, compressors, drivers, valves, pipelines, and stress analysis. Mr. Guidroz has a broad knowledge base from over twenty years of experience in the oil and gas business.

**MR. ROGER HADDAD** PE, FMP is a practicing project manager with Occidental Petroleum and has over 25 years of design and project experience in the Oil and Gas and Chemical Industries. He started his career as a structural engineer and progressed from design to construction to project management. He gained his project management skills while working on fast-tracked projects in North America where he held various positions in project and portfolio management. For the last 10 years, Roger has managed large offshore and onshore oil and gas projects in the Middle East. With his extensive experience in design, construction, risk management and project controls, he has been managing large project teams and contractors and working with JV partners as well as national oil companies. Roger earned his PE in Electrical Engineering from the University of California, Berkeley. He currently works for a multinational EPC company based in Dubai, United Arab Emirates.

**MR. GERARD HAGEMAN** is based in The Hague (the Netherlands), where he settled after 33 years in the downstream oil and gas business (including LNG). He is equipped with thorough knowledge of liquefied gas technology and liquefied gas FPSO (Floating Production, Storage and Offloading) projects, having managed a large offshore floating group terminal in Indonesia. He has extensive experience in process technology, teamwork, change processes, and competency assessment. He started his career with the Gulf Oil Refinery in The Netherlands as a process engineer, followed by a job as economic analyst for Gulf Oil Chemicals in London, after which he joined Shell for 25 years. During his career with Shell, Mr. Hageman has worked in numerous countries including Malaysia, Thailand, Saudi Arabia, Oman, United Arab Emirates, United Kingdom and, of course, The Netherlands. He has been responsible for Process Engineering, Design, Operation, Start-up, Engineering, HSE (Health, Safety, Environment), Construction, Commissioning, Commissioning, change processes, Competency Assurance and Training. He holds an MS in Chemical Engineering from Twente University in The Netherlands. He is a member of KNIV, i.e. The Royal Dutch Institute of Engineers. Mr. Hageman joined PetroSkills | John M. Campbell in 2012.

**MR. JAMES L. HANER** is the head of Ultimate Business Resources (UBR) Consulting, specializing in “Building Better Businesses.” UBR is an independent consultancy that provides project management services to Fortune 500 companies in the US, Europe, Africa, and China.
James has more than 30 years of experience in business and IT. His responsibilities have included establishing a corporate web presence for a Fortune 500 company, creating a successful organization-wide employee development plan, and developing the IT infrastructure for a start-up company in support of their project needs. He also worked as an intern at the University of Idaho and Conflitts University. He earned an MA degree in Management/Leadership from the Cranmont Graduate School and took classes with Peter F. Drucker, “the father of modern management.” James is a contributing author of 140 Project Management Tips in 140 Words or Less, 2010; Making Smart Project Decisions, 2011, and Program Management: A Lifecycle Approach (2012).

MR. MALCOLM HARRISON graduated in Chemical Engineering in 1981 and completed a MBA in 1995. He has worked mostly in the areas of oil and gas, cryogenics and gas monetization. Mr. Harrison has worked for BP, BOC, Foster Wheeler and BG. He was Director of Process Engineering for Foster Wheeler and, most recently, was BG’s Chief Process Engineer. He has held the role of Chief Technology Officer for APPEGA (Alberta’s Prospect Management Organization) for over 10 years, visiting many countries and encountered more cultures than he can remember. While his foundations are in process engineering, the MBA sparked an interest in corporate strategy, in changing organizations and building high performing teams.

MR. RON TWIN is the EVP for Sales and Member Engagement for PPD. He is a petroleum geologist, a petroleum engineer, a geothermal power plant designer, and a leadership and communication skills. A registered professional engineer, Ron’s 39-year career has spanned numerous roles including staff engineer, engineering supervision, corporate knowledge management and professional staffing and competency development. Ron is an active supporter of global engineering education and is a board member for multiple roles for ABET to the US and including Executive Committee of the ABET Board. Ron received a BS degree from the University of Tulsa in petroleum engineering.

DR. FRANK JARRETT has over 40 years of experience, primarily in the natural gas processing industry. Responsibilities have included project design team supervision, conceptual and detailed process design, extensive experience with computer simulation tools, computer program development and testing. He has developed a variety of simulation tools and solutions, and has authored numerous papers on process simulation and specification, hazards analysis, checkout, start-up, debottlenecking and teaching. His background covers natural gas liquids recovery, natural gas liquid injection and recovery of helium from natural gas, acid gas removal, product distillation, dehydration, relief system design and evaluation, CO2 pipeline and compression plant, utility support systems. He is a registered professional Engineer in the state of Colorado and has served on the Board of Directors of the Rocky Mountain Chapter of the Gas Processors Association. Mr. Jarrett received a BS in Chemical Engineering, Oil Refining Engineering from the Colorado School of Mines.

MR. ALFRED R. JENNINGS, JR. is a well stimulation consultant with Enhanced Well Stimulation, Inc., located in Tyler, Texas. He actively provides well stimulation consulting services throughout the world. Prior to establishing Enhanced Well Stimulation, Inc., he worked for Mobil R&D Corporation/Mobil E&P Services, Inc. where he was involved in various well stimulation throughout Mobil’s worldwide operations. Prior to Mobil he worked in various positions in Engineering Services in all aspects of hydraulic fracturing research and field applications. He is a registered Professional Engineer and has authored or co-authored 96 US patents pertaining to applications and techniques for well stimulation. He is widely published and has served on numerous SPE Committees. He received a BS Degree in Chemistry and an MS Degree in Petroleum Engineering from the University of Oklahoma.

MR. ROBIN JENTZ has 38 years of oil and gas processing experience. His work has included most process areas of oil and gas production, including design and testing of low downpour glycol dehydration units, analysis of flare and relief systems using dynamic simulation programs, retrofitting gas/liquid separators to increase capacity and eliminate entrainment, and upgrading oil dehydration. Mr. Jentz has worked for both operating and engineering contracting companies. He is a Registered Professional Engineer in Alaska and Washington. Mr. Jentz received his BS in Chemical Engineering from California State University Long Beach in 1974.

MR. STEPHEN JEWELL is an independent oil and gas consultant and advisor with 30 years’ experience in the upstream sector. He was previously the Managing Director and co-founder of Xodus Subsurs Ltd., the Wells and Subsurspace company within the Xodus Group of technical consultants. He was also Chief Operating Officer and a founding shareholder of Composite Energy Limited, a European Unconventional Gas company, growing the company from seed capital of £500k to an ultimate sale value of over £200m. Stephen has over 16 years’ experience with Amoco/Essar in the Middle East and Europe. He had been with Mobil for 5 years in the Netherlands and Hess starting as petroleum engineer and progressing to Acting General Manager of its North Sea Operations Base. He received a BEng (Hons) degree in Electronic Engineering from the University of Sheffield and speaks Norwegian and French.

DR. SATISH K. KALRA is a petroleum engineer with over 25 years of management, operations, teaching, research, and consulting experience with national and private oil companies. As an Associate Professor of Petroleum Engineering, he taught graduate and undergraduate students at the University of Westernmost Louisiana, Lafayette. He also worked for the University of Texas at Austin. His career includes assignments with ONGC (National Oil Company of India), ARCO Offshore (now BP), BJ Services, Agio Oil and Gas, Schumberger / Holditch, Miller and Lands and SKAL-TEX Corporation. He is widely published in technical literature and was the Chairman of the National SPE Committee on Monographs. His technical expertise includes reservoir characterization, production optimization, and risk analysis. He is an expert in completion and production and advisor with 30 years’ experience in the upstream sector. He was previously the Managing Director and co-founder of Xodus Subsurs Ltd., the Wells and Subsurspace company within the Xodus Group of technical consultants. He was also Chief Operating Officer and a founding shareholder of Composite Energy Limited, a European Unconventional Gas company, growing the company from seed capital of £500k to an ultimate sale value of over £200m. Stephen has over 16 years’ experience with Amoco/Essar in the Middle East and Europe. He had been with Mobil for 5 years in the Netherlands and Hess starting as petroleum engineer and progressing to Acting General Manager of its North Sea Operations Base. He received a BEng (Hons) degree in Electronic Engineering from the University of Sheffield and speaks Norwegian and French.

MR. THOM KRAMER is a safety consultant and structural engineer with 22 years of experience. As a duly registered professional engineer and certified safety professional, he has spent much of his career consulting with clients to reduce risk for workers at heights. He specializes in the assessment and design of fall protection systems, as well as fall protection program development and training. Thom is an active member of NAAE and is president of the Aircraft Owners and Pilots Association.

MR. DALE KRAUS has over 30 years of progressive responsibility from staff to management positions within the Upstream Oil and Gas Industry. Mr. Kraus has obtained a sound base in Facility/Processing Engineering with an emphasis in Packed Beds, Liquid-liquid, Liquid-liquid and Natural Gas processing. He has been a project manager working field development projects through all the phase gates and stages. He frequently travels the globe assisting operations with process issues, and showing them how to unlock additional barrels through the application of production optimization. This has delivered over $2 billion in value with a significant portion of the work related to the production of CO2 for enhanced recovery projects.

MR. JAMES LANGER is a registered professional chemical engineer in Texas and California. Jim worked for Hess as a Senior Process Engineer, troubleshooting process problems and working over 25 years as a Senior Staff Process Engineer, and Principal Technical Expert for Shell / Shell Global Solutions. He has had a global job for the past 20 years and had experience in offshore / onshore, shallow water / deepwater, heavy oil / light oil, offshore / onshore, and natural gas processing. Jim has been a project manager working field development projects through all the phase gates and stages. He frequently travels the globe assisting operations with process issues, and showing them how to unlock additional barrels through the application of production optimization. This has delivered over $2 billion in value with a significant portion of the work related to the production of CO2 for enhanced recovery projects. The project took 8 years and is located on Pacific Coast Highway in Huntington Beach California. Jim graduated with a BS in Chemical Engineering from UCLA and has an MBA from Pepperdine.
Our Instructors

MR. PERRY LOVELACE | CMRP, specializes in Maintenance and Project Management, Leadership and Competency-based Training and has over 25 years' experience in industrial training and consulting. His work in competency-based workforce development is known worldwide. In addition to MBA, he also has a Ph.D. in Science and Technology from the University of Pittsburgh, and has completed management training at Harvard Business School. He holds a BS and an MS in Mechanical Engineering with higher honors from Rice University and has completed management training at Harvard Business School. He has over 25 years of experience training non-native English speakers. He holds a B.Sc. (Honors) in Chemical Engineering from Arizona State University.

MR. PETE LUAN | has over 25 years of international upstream project management experience. He has also consulted for the past 10 years helping energy companies improve their management of capital projects. He has an extensive track record of helping E&P companies improve their capital project management experience. He has also consulted for the past 10 years helping energy companies improve their management of capital projects. He has an extensive track record of helping E&P companies improve their capital project management experience.

MR. JOHN MORGAN | is an accomplished multilingual executive with over 25 years of international upstream project management experience. He has more than 38 years' experience in engineering and management of oil, gas, chemicals and plastics downstream projects. He is also an Instructor/Consultant for PetroSkills and has over 30 years of experience training non-native English speakers. He holds a B.Sc. (Honors) in Chemical Engineering from the University of Alberta at Edmonton. He has over 30 years' experience in the management of upstream engineering projects.

MR. JOHN ROBERT (BOB) NICHOL | is President of the recently founded Petrobex Consulting Limited, located in Sherwood Park, Alberta, Canada. He provides Petroleum Engineering consulting services to the Government of Alberta, Department of Energy and is a sessional lecturer in Petroleum Engineering at the University of Alberta at Edmonton. He has over 30 years’ experience in the broad spectrum of Petroleum Engineering roles including field operations, reservoir engineering and engineering research. Bob received a BSc degree in Electrical Engineering and an MEng degree in Mineral Engineering both from the University of Alberta.

MR. TIM NIEMAN | is President of Decision Applications, Inc., a San Francisco area based decision analysis consulting firm. His professional experience includes over 30 years in various roles of varying sizes and scopes involving the application of decision and risk analysis methodologies in the energy and environmental sectors, and 10 years as a practicing petroleum geophysicist. His background includes work in decision analysis, risk analysis, business modeling, financial forecasting, strategic planning, R&D portfolio management, software development, geology, and geophysics. Mr. Nieman is formerly Senior Decision Analyst for Geometric Consultants, an Oakland based geological and environmental consulting firm. Prior to that, he was Director of Operations for Lumina Decision Systems, a decision analysis consulting firm. He has extensive experience in the police, local government, education, food, general and leisure retailing, healthcare and residential care, agricultural processing, facilities management and food manufacturing. Andew is a specialist occupational safety and health instructor with over twenty years’ experience with Corporate Risk Systems Limited. He holds a Masters’ Degree in Occupational Safety and Health and is a registered professional engineer in the State of Texas.

MR. RONNIE NORVELL | was Director of Instructional Design and Quality at PetroSkills 2009-2012. Prior to joining PetroSkills, Ronnie served as a Sr. Consultant and frequent advisor as Director of Continuing Education with the Saudi Aramco ESP Continuing Excellence Department. Prior to joining Saudi Aramco in 1998, Ronnie Norvell was the President and Managing Partner of Management Paradox Strategies, a U.S. based consulting firm specializing in management and leadership development. Over the past forty years, Mr. Norvell has held senior management-level roles in large corporate international and U.S. foreign industries, managed the training functions of two major corporations, and served as a college administrator and consultant. Ronnie has served on the Board of Directors of three international organizations including the American Society for Training and Development (ASTD). He has also served on the continuing education faculty of the University of Texas at Dallas and on the adjunct faculty of the University of MIA.

MR. ANDREW NEWBROUGH | is a Chartered Member of the Institution of Occupational Safety and Health (CMIOSH), the International Association of Cement Lime and Gypsum Professionals (IACLPGP), a Chartered Member of the Institution of Occupational Safety and Health (CMIOSH), and a member of the research team that received the Special Meritorious Award for Engineering Innovation from Petroleum Engineer International in 1999. He is a member of the team that received the Heat and Temperature Engineering Innovation Award of 1992. He has been involved in the photography of over 3000 clients for industrial, utility organizations of different types and sizes.

Mr. Perry Lovelace has completed management training at Harvard Business School. He holds a BS and an MS in Mechanical Engineering with higher honors from Rice University and has completed management training at Harvard Business School.

Mr. Pete Luan has over 25 years of international upstream project management experience. He has also consulted for the past 10 years helping energy companies improve their management of capital projects. He has an extensive track record of helping E&P companies improve their capital project management experience. He has also consulted for the past 10 years helping energy companies improve their management of capital projects.

Mr. John Morgan is an accomplished multilingual executive with over 25 years of international upstream project management experience. He has more than 38 years' experience in engineering and management of oil, gas, chemicals and plastics downstream projects. He is also an Instructor/Consultant for PetroSkills and has over 30 years of experience training non-native English speakers. He holds a B.Sc. (Honors) in Chemical Engineering from Arizona State University.

Mr. John Robert (Bob) Nichol is President of the recently founded Petrobex Consulting Limited, located in Sherwood Park, Alberta, Canada. He provides Petroleum Engineering consulting services to the Government of Alberta, Department of Energy and is a sessional lecturer in Petroleum Engineering at the University of Alberta at Edmonton. He has over 30 years’ experience in the broad spectrum of Petroleum Engineering roles including field operations, reservoir engineering and engineering research. Bob received a BSc degree in Electrical Engineering and an MEng degree in Mineral Engineering both from the University of Alberta.

Mr. Tim Nieman is President of Decision Applications, Inc., a San Francisco area based decision analysis consulting firm. His professional experience includes over 30 years in various roles of varying sizes and scopes involving the application of decision and risk analysis methodologies in the energy and environmental sectors, and 10 years as a practicing petroleum geophysicist. His background includes work in decision analysis, risk analysis, business modeling, financial forecasting, strategic planning, R&D portfolio management, software development, geology, and geophysics. Mr. Nieman is formerly Senior Decision Analyst for Geometric Consultants, an Oakland based geological and environmental consulting firm. Prior to that, he was Director of Operations for Lumina Decision Systems, a decision analysis consulting firm. He has extensive experience in the police, local government, education, food, general and leisure retailing, healthcare and residential care, agricultural processing, facilities management and food manufacturing. Andew is a specialist occupational safety and health instructor with over twenty years’ experience with Corporate Risk Systems Limited. He holds a Masters’ Degree in Occupational Safety and Health and is a registered professional engineer in the State of Texas.

Mr. Ronnie Norvell was Director of Instructional Design and Quality at PetroSkills 2009-2012. Prior to joining PetroSkills, Ronnie served as a Sr. Consultant and frequent advisor as Director of Continuing Education with the Saudi Aramco ESP Continuing Excellence Department. Prior to joining Saudi Aramco in 1998, Ronnie Norvell was the President and Managing Partner of Management Paradox Strategies, a U.S. based consulting firm specializing in management and leadership development. Over the past forty years, Mr. Norvell has held senior management-level roles in large corporate international and U.S. foreign industries, managed the training functions of two major corporations, and served as a college administrator and consultant. Ronnie has served on the Board of Directors of three international organizations including the American Society for Training and Development (ASTD). He has also served on the continuing education faculty of the University of Texas at Dallas and on the adjunct faculty of the University of MIA.

Mr. Andrew Newbrough is a Chartered Member of the Institution of Occupational Safety and Health (CMIOSH), the International Association of Cement Lime and Gypsum Professionals (IACLPGP), a Chartered Member of the Institution of Occupational Safety and Health (CMIOSH), and a member of the research team that received the Special Meritorious Award for Engineering Innovation from Petroleum Engineer International in 1999. He is a member of the team that received the Heat and Temperature Engineering Innovation Award of 1992. He has been involved in the photography of over 3000 clients for industrial, utility organizations of different types and sizes.
MR. WILLIAM K. OTT is an independent petroleum consultant and is the founder of Well Completion Technology, an international engineering consulting and construction company based in Lafayette, Louisiana. He has 44 years of experience in the oil and gas industry. Mr. Ott has held a number of positions with several major oil companies, including H. J. Henry & Company, Amoco Production Company, Shell, and Amoco Chemical Company. He has extensive experience in leading seminars, and developing and implementing training courses to varying client types throughout his career, and he has authored numerous articles on various aspects of petroleum engineering, production, and well completions. He is a registered professional engineer in Texas and a member of the American Association of Petroleum Geologists. He received a B.S. in Chemical Engineering from the University of Mississippi.

MR. JASON PINGENOT has over 21 years of experience in planning, design, engineering, management, and commissioning for a wide range of natural gas installations including, but not limited to, gas gathering systems, compressor stations, processing plants, metering facilities, and truck loading stations for projects around the globe. In the course of his career he has served the industry as a drafting instructor, engineering consultant, and led an E&I technical team at Encana Oil & Gas. Mr. Pingenot has strong experience in the design, engineering, fabrication, and execution of transportation projects that comply with all applicable safety codes and standards. Recently, Mr. Pingenot was the Vice President of Engineering and Development at G&W Design & Engineering based in Denver, Colorado, with a field service office in North Dakota. STV Energy Services recently acquired G&W and Mr. Pingenot continues to perform a similar function as IC&E Engineering Chief and Senior Advisor. Mr. Pingenot is a registered professional engineer in the states of Colorado, New Mexico, Utah, North Dakota, Wyoming and Texas. He is a member of the ASME and ASCE, and is a member of AutoCAD and related software for the generation of design documents, understanding of NEC, IEC, API, NFPA, ISA, IEEE and OSHA codes, guidelines and practices pertaining to common natural gas facility equipment and installations, advanced use of Excel and creation of time saving tools, use and development of functional specifications for Access databases to improve productivity, and various specialized software for completion of engineering tasks. He has a bachelor's degree in Electrical Engineering from the University of Colorado.

MR. WILLIAM (BILL) E. POWELL is an oil and gas professional with over 30 years of experience in field operations, technical development, reservoir management, project management, business development, and profit and loss responsibility. Prior to entering the oil and gas industry with Schlumberger, he served as a commissioned officer in the US Marine Corps. Bill holds BS and MS degrees in Physics. He is a member of the SPE, AAPG, SEG, and EAGE. Over the course of his career, Bill has taught short courses on reservoir management for small and large companies, has been a Vice President Marketing for S.A. Holditch & Associates Inc., a well-known petroleum consultancy where he played a key role in building the brand equity that was the basis of their successful acquisition and integration with Schlumberger. Schlumberger acquired his company with Bill in 1988. After the acquisition with Schlumberger was as North America Business Development Manager for Data & Consulting Services where he maintained close relationships with numerous major and independent oil and gas companies. Bill currently performs the role of Petroleum Integrated Discipline Manager for an undisclosed personality.

DR. JAY RAJANI worked in Amsterdam, The Hague and London for Royal Dutch Shell Group of Companies for 33 years. He started his career in the Shell Research Laboratories in Amsterdam where he was involved in the development of refinery burners/furnaces. He later moved to Separation Technology. He worked on the development of conventional as well as membrane based gas-liquid and liquid-liquid separations. From 1987 to 2005, he worked in the Gas/Liquid Treating at Sulphur Processes department as Principal Technologist, providing technical and operational excellence to all gas plants and LNG plants that were operated or advised by Shell. His last position (2005 to 2010) was as a Lead Process Engineer with Qatar Petroleum (SAG and LNG) with focus on EPC contracts. During this time he became a SPE Distinguished Lecturer. The last three years of the project involvement was in the construction, commissioning and start-up of the 7.8 mtpy LNG trains. From 2011 to 2014 Jay worked with SBM Offshore in the Netherlands on the development of gas and liquid processing equipment for FPSO projects. He delivered a number of conference presentations and technical papers and is an instructor with PetroSkills / John M. Campbell. He holds BS and PhD degrees from the University of London and a Diploma in Management Studies from the University of Coventry.

DR. CLIFF REDUS is an independent petroleum engineering consultant who specializes in production system optimization and subsurface flow assurance. Prior to starting his consulting business, he was an Associate Professor of Petroleum Engineering at the University of Texas. He has 30 years of petroleum industry experience, both in production research and field operations in the area of multiphase flow. His primary areas of interest are multiphase flow in well bores, flow lines and production equipment, multiphase flow modeling and reservoir management. He has significant experience in separation technology and paraffin and hydrate deposition in production flow lines and wells. He was in a supervisory capacity in production related industrial research for the last 10 years with Texaco’s Upstream Technology Development. Prior to that, he was Director of Texaco’s five oil multiphase flows loop in Humble Texas. At Humble Texas, he was actively engaged in teaching, research in multiphase flow, and as executive director of the University of Houston’s Fluid Flow Laboratory. He received a B.S. in Mechanical engineering from Texas A&M University in Kingsville, Texas, an MS. in Petroleum Engineering from the University of Houston, both in Mechanical Engineering.

MR. GEORGE REYNOLDS is a Safety Training Specialist with more than 17 years of experience in target management, training and organizational development. He has delivered training and professional development courses to varying client types throughout his career, and he has a proven track record in achieving results and positively impacting business issues. Mr. Reynolds is a facilitator for LBUR, which is owned by the International Association for Continuing Education and Training to provide continuing education credits for staff and clients. Mr. Reynolds has a master’s degree in Human Relations from the University of Oklahoma, and a bachelor’s degree in Business Management from McKendree University. He also has a DACCUM Certification from the Ohio State University and a Mediation Certification from Northwestern University Kellogg School of Management. He has instructor certifications from ODJI, Achieve Global, and ELL. Mr. Reynolds also has 21 years of military service.

DR. GEORGE RODENBUSH has more than 32 years of experience in the petroleum industry as a geoscientist and reservoir engineer. His early career involved working in exploration for developing fields in Russia and Caspian Sea, and more recently in Asia. He has conducted technical petroleum industry courses worldwide and authored a paper for ASME/ETCE 2000 on value of well test accuracy, for an instrument manufacturer as service manager and for an engineering and gas company as a division automation supervisor and later as a staff business as production engineering manager, and working for a major oil company as a reservoir engineer. His work experience includes working in the aerospace industry as an analog electrical and instrumentation design business for many years. His work also included the design of communications and diagnostic system software for the Alcatel Tension Leg Platform that would move the record water depth for offshore production from 410m to 670m. In addition to design activities, he spent several years working on various technical problems involving hydraulic and hydrostatic design of offshore platforms. He has provided development planning support to operating companies around the globe in selecting systems for the development of deepwater offshore fields. He spent several years as an Engineer Manager supervising a group responsible for the design of floating, risers, mooring systems and foundations for deepwater development systems worldwide. He was active in the API Olfich Structures subcommittee, which established and maintained key standards for offshore engineering, chairing that group for several years. He was appointed as a Global Technology Leader for Floating Production Systems and led the API floating production systems technical analysis group supporting the design of the Auger Tension Leg Platform that would move the record water depth for offshore production from 410m to 670m. In addition to design activities, he spent several years working on various technical problems involving hydraulic and hydrostatic design of offshore platforms.

MR. HENRY H. ROSS has more than 39 years’ experience in the oil and gas and petrochemical industries. He has been involved in global oil and gas operations from exploration through production. From 2002 until 2016, while at PetroSkills, he was an executive VP with responsibility for field operations management, business development, corporate development and training. Mr. Ross delivered several courses to various client types throughout his career, and he has authored numerous articles on various aspects of petroleum engineering, production, and development. He specializes in reservoir management and reservoir characterization to optimize reservoir performance and reserves. He has worked in more than 30 countries in the Middle East, Asia, South America, Africa, Europe, and North America. He has worked for many of the largest and newest exploration and production companies in the world, including Chevron, Exxon, Amoco, a number of companies in the Norway and Norwegian fields, and the North Sea. He has a B.S. in Petroleum Engineering from the University of California.

MR. GERRY H. ROSS has more than 39 years’ experience in oil and gas exploration and production. He has managed a number of large reserves exploration and production projects. He has managed and supervised technical and operations people in the oil and gas industry in the United States, Canada, the former Soviet Union, Pakistan, the United Arab Emirates, Malaysia, and Singapore. He has taught courses in the areas of reservoir engineering, reservoir management, and reservoir characterization to optimize reservoir performance and reserves. He has been involved in the operation and management of a number of large reserves exploration and production projects. He has worked for a number of large reserves companies in the world, including Chevron, Exxon, Amoco, a number of companies in the North Sea and Norway. He has a B.S. in Petroleum Engineering from the University of California.

MR. RICHARD H. SCHROEDER is founder and President of RJS Management, specializing in technical and management consulting for the petroleum industry. He has more than 45 years of experience in teaching and training management, reservoir engineering, and current during severe storms. He then joined a Marine Systems Designing, analyzing an offshore oil and gas development. He started his career working in R&D where he developed new tools for the estimation of loads on offshore platforms induced by wind, wave and current during severe storms. He then joined a Marine Systems Group, which was formed to develop concepts for the development of deepwater offshore systems. He led the analysis group supporting the design of the Auger Tension Leg Platform that would move the record water depth for offshore production from 410m to 670m. In addition to design activities, he spent several years working on various technical problems involving hydraulic and hydrostatic design of offshore platforms. He has provided development planning support to operating companies around the globe in selecting systems for the development of deepwater offshore fields. He spent several years as an Engineer Manager supervising a group responsible for the design of floating, risers, mooring systems and foundations for deepwater development systems worldwide. He was active in the API Olfich Structures subcommittee, which established and maintained key standards for offshore engineering, chairing that group for several years. He was appointed as a Global Technology Leader for Floating Production Systems and led the API floating production systems technical analysis group supporting the design of the Auger Tension Leg Platform that would move the record water depth for offshore production from 410m to 670m. In addition to design activities, he spent several years working on various technical problems involving hydraulic and hydrostatic design of offshore platforms.

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MR. JOHN SCHUYLER, CAM, CCE, CMA, CMC, CPIM, PMP, and PE, is a decision analyst, evaluation engineer, and inventor. He founded his consulting practice, Decision Precision, in 1988. He has over 37 years of experience in analysis, consulting, training and management, primarily in the energy industry. His focus has been in feasibility analysis, appraisals, corporate planning, and evaluation software. He has presented over 250 courses and seminars in North America, Australia, Asia-Pacific, Latin America, and many other countries.

MR. BUCK TITSWORTH has over 40 years’ experience with major international operating and service companies in worldwide oil and gas exploration and production. He has managed project development, business planning. Specific experience includes upstream projects (Middle East - Saudi Arabia, Egypt, Kuwait); oil & gas pipeline and production facilities projects (South America, the Far East, FSU) and downstream projects (Middle East, Asia-Pacific, Asia, Africa); refining projects (USA and eastern Europe); and global business/strategic planning for the engineering and construction industry. Assignments have included establishing joint ventures and/or new offices in Vietnam, Pakistan, Nigeria, Australia, Canada, and Holland. Mr. Titsworth has a BS in Chemical Engineering from the University of Houston, and is a registered professional engineer in four states.

MR. JOHN C. SCRUTON-WILSON is a founding faculty member of the BP Financial University responsible for developing and delivering finance and economic evaluation training throughout the BP organization. His leadership in negotiation was developed by developing a business and operations M.Sc. program at the Colorado School of Mines, and overseeing the business, health and safety, and environmental management systems for various operations.

MR. RONNIE TUCKER is a seasoned Irish business executive, financial and economic consultant with extensive practical experience. He was project Director, Project Director in Helsinki, as a CFO/COO in New York, as a Director of Corporate Risk Management in Brussels and as a Financial Analyst in Silicon Valley. He has been a board member in Belgium, France, Ireland, Silicon Valley, Netherlands, UK and USA and has sat in a number of board and sub-committee roles in Latin America, Asia, Australia, Eastern Europe, and other regions.

MR. DAVID WHITELEGG graduated with a BSc (Hons) in Environmental Management from Cranfield University in the UK. He is a Chartered Environmental Consultant (CEv) with the Society for the Environment, a Chartered Waste Manager with Chartered Institute for Waste Management (CIWM), and a full member (MIEA) of IEMA (Institution of Environmental Management and Assessment). He also is a Graduate Member of the Institute of Information Security Professionals Standards Committee at IEMA. He comes from a background in landfill and waste sites’ operation management, and is an experienced environmental and QH&S inspector with considerable international experience.

MR. PETER WILLIAMS has over 35 years of industrial experience in both the oil and gas processing and chemical industries. His experience includes plant process engineering, operations supervision, project development and business case definition, project technical support, plant engineering management, and internal consulting, primarily with Saudi Aramco. Canadian experience includes plant engineering, operating support services, and business process improvement and upgrading, and project engineering. He also has experience with benchmarking, implementation of a safety management system, and the application of Lean Six Sigma methods to engineering management. He has a BSc in Chemical Engineering from the University of Birmingham and is a Professional Engineer in Alberta and is a certified Six Sigma Black Belt.
MR. RONN WILLIAMSON, CFPIM, CPM, has provided education programs and consulting globally in supply management for the oil and gas industry through PetroSkills and John M. Campbell & Co for the past eleven years. Most recently, he was the Technical Training Director for John M. Campbell & Co. Working with major oil companies, he created the PetroSkills discipline competency maps for strategic supply chain management and led the supply chain discipline network for several years. Ronn has almost 40 years of supply chain management experience, with 18 years of operational management experience and 21 years of consulting and training around the globe. As a consultant, Ronn has designed and managed projects for more than fifty organizations in numerous industries to deliver improved organizational policies and procedures, increased leverage of purchasing power, reduced inventories, and improved resource utilization in the supply chain. Ronn gained his supply management expertise in the first half of his career through ever-increasing operational and executive management roles at Thermo King Corporation, a billion-dollar global manufacturing subsidiary of Westinghouse Electric Corporation. Ronn received a BS in Physics from St. John’s University and an MBA from the University of Minnesota. He has been a member and past chapter president, of the American Production and Inventory Control Society (APICS). He has been a member of the National Association of Purchasing Management-Twin Cities (NAPM-TC), the Manufacturers Alliance and the International Association for Commercial Contracts Management (IACCM). Ronn is certified at the Fellow Level by APICS and has a lifetime purchasing certification by the Institute of Supply Management (ISM).

MR. WES WRIGHT has 32 years’ experience in oil and gas producing facilities. Mr. Wright began teaching with PetroSkills in 2004 where he has been delivering courses in CO2 Surface Facilities, Oil and Gas Processing and Operator Training world-wide. Previously, Mr. Wright was the lead on-site engineer at the Weyburn CO2 Miscible flood where he was closely involved in the development, design, construction, start-up and operations. Through the 1980’s, Mr. Wright performed contract research at the University of Calgary in Enhanced Oil Recovery and was a consultant on a wide range of sweet and sour oil and gas projects throughout Western Canada. Mr. Wright graduated in 1983 with a BSc in Engineering from the University of Calgary. He is a Professional Engineer in Alberta, Canada and is a member of the SPE. He has been published in the ASME-OMAE, CSCE, IAHR, and in Carbon Sequestration and Related Technologies (Wiley, 2011).

MR. CLYDE YOUNG has over 30 years of diverse experience in operations and maintenance of production and processing facilities. This includes significant experience in operations and development of management systems for gas processing and water/wastewater treatment facilities. This includes operating procedure development, training program development, compliance auditing, vulnerability assessment, emergency planning and mechanical integrity program development. Mr. Young provides many of our clients with PHA services, compliance audits and Hazards Reviews. Mr. Young has presented at the Mary K. O’Connor Process Safety Symposium and written several papers that have been published in various industry publications. Mr. Young holds a BS in Social Sciences from the University of Wyoming- Laramie Wyoming.
To register for a course, or for questions on inhouse training or any of our other solutions, contact our Customer Service Department at +1.918.828.2500 or training@petroskills.com.

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CERTIFICATES,
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A Certificate of Completion is awarded to each participant who satisfactorily completes the course and will be awarded by the instructor(s) on the final day.

PetroSkills course hours can be used to satisfy PDHs for licensed engineers in most US states. In many instances, course hours can be used for international CEU credit also. Every course certificate tells the number of CEUs earned and also can be used to submit to your licensing board or accrediting body for approval.

TERMS AND CONDITIONS

REGISTRATION AND PAYMENT

In a worldwide teaching operation, sufficient lead time is needed for course logistics. For this reason, PetroSkills would appreciate receiving registrations at least one month before the course. However, we accept paid registrations for a viable session through the day before the course begins. Registrations can be made online at petroskills.com or by contacting customerservice@petroskills.com for a Registration Form.

Registrations are confirmed upon receipt of payment. In the meantime, an Acknowledgment of Reservations will be issued via email. Once payment is received, an email will be issued confirming the registrant’s seat in the course. Please note we do not arrange hotel accommodations for participants. When possible, we reserve a block of rooms at the suggested hotel(s). Participants should contact the suggested hotel directly for room rates and availability at least three weeks before the course begins. Remember to mention that you are attending a PetroSkills course to receive a discounted rate, if applicable. Please note if a course venue changes for whatever reason, the participant or their representative will be contacted via email.

PetroSkills reserves the right, without payment, of consideration to videotape, film, photograph, and/or record course sessions and course participants in any media type and to alter or edit these images for use in its publications, including website entries.

PetroSkills complies with all U.S., European, and other international laws relating to trade and economic sanctions. PetroSkills reserves the right to refuse or cancel an enrollment if PetroSkills, in its sole discretion, determines that providing course materials or allowing an enrolee to attend could constitute a violation of law.

PetroSkills may use participant contact information (mail, email, telephone, or fax) for the following limited purposes: (i) to provide updated class information and other information related to professional development in the petroleum industry, (ii) to request help in evaluating PetroSkills courses and materials, and (iii) to provide information concerning future course offerings.

The use of any recording device (audio or video) by participants during a PetroSkills course is strictly prohibited. The unauthorized use of a recording device during a PetroSkills course presentation shall be grounds to remove the participant and confiscate or destroy the related recording. No portion of any PetroSkills course may be recorded digitally, on film, video tape, audio tape or other recording device, or be reproduced photographically or by any sight or sound device without the explicit written permission of PetroSkills. All PetroSkills course presentations are the sole property of PetroSkills. We are the exclusive owner of the copyright of all course materials.

TUITION FEES

Tuition fees are due and payable in US dollars upon receiving the corresponding invoice. Again, a registration will not be confirmed until payment has been received.

Tuition fees do not include living costs, but do include tuition, purchase price of course materials, daily refreshments, and a $100.00(USD) non-refundable registration fee, per five days of training or less. Tuition must be paid prior to the first day of the course. If payment has not been made prior to the course start date, the registrant or their representative should contact the Customer Service Department to make payment arrangements.

Note: Where applicable due to government regulations, Goods and Services Tax (GST) or Value Added Tax (VAT) will be added to the total tuition fees. Pricing subject to change. See website for current pricing and availability.

TRANSFERS, SUBSTITUTIONS, CANCELLATIONS, AND REFUNDS

Transfers may be accepted if received 30 days or more before the course begins. There is not a transfer fee, but tuition will be due based on the registered course. PetroSkills may allow a registrant to transfer to a subsequent course after the 30-day cut off period providing the tuition fees have been paid and the requested course is open for enrollment. If a transfer is made and the subsequent course is not attended, no money will be refunded. Only one transfer per initial registration is allowed.

Substitutions may be made at any time without penalty.

If it is necessary to cancel an enrollment, full paid tuition, less the non-refundable registration fee of $100.00(USD) per five days of training or less, will be refunded providing the cancellation is received in our office 30 days or more prior to the course start date. If tuition is not paid at the time of the cancellation, the $100.00(USD) registration fee per five days of training or less is due, providing the 30-day notice was received. For cancellations received less than 30 days prior to the course, the full tuition fee is due. Please contact the Customer Service Department if you wish to cancel or transfer your enrollment. Enrollments are not automatically cancelled if tuition payment is not received by the start of the course.

Transfers and cancellations will not be honored and tuition is forfeited and non-transferable for courses that have reached maximum participation regardless of the amount of notice given.

We reserve the right to cancel any course session at any time. This decision is usually made approximately two weeks before the course begins. If we cancel a course, enrollees will be given the opportunity to transfer to another course or receive a full refund, provided the enrollment was not transferred into the cancelled course late. Keep our cancellation policy in mind when making travel arrangements (airline tickets, hotel reservations, etc.), as we cannot be responsible for any fees charged for canceling or changing your travel arrangements. We reserve the right to substitute course instructors as necessary.
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