

PetroSkills®

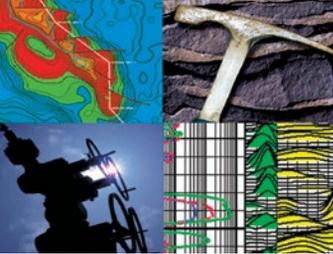
2016 Introductory and Multi-Discipline Training Guide



OGCI®

John M. Campbell

RDC



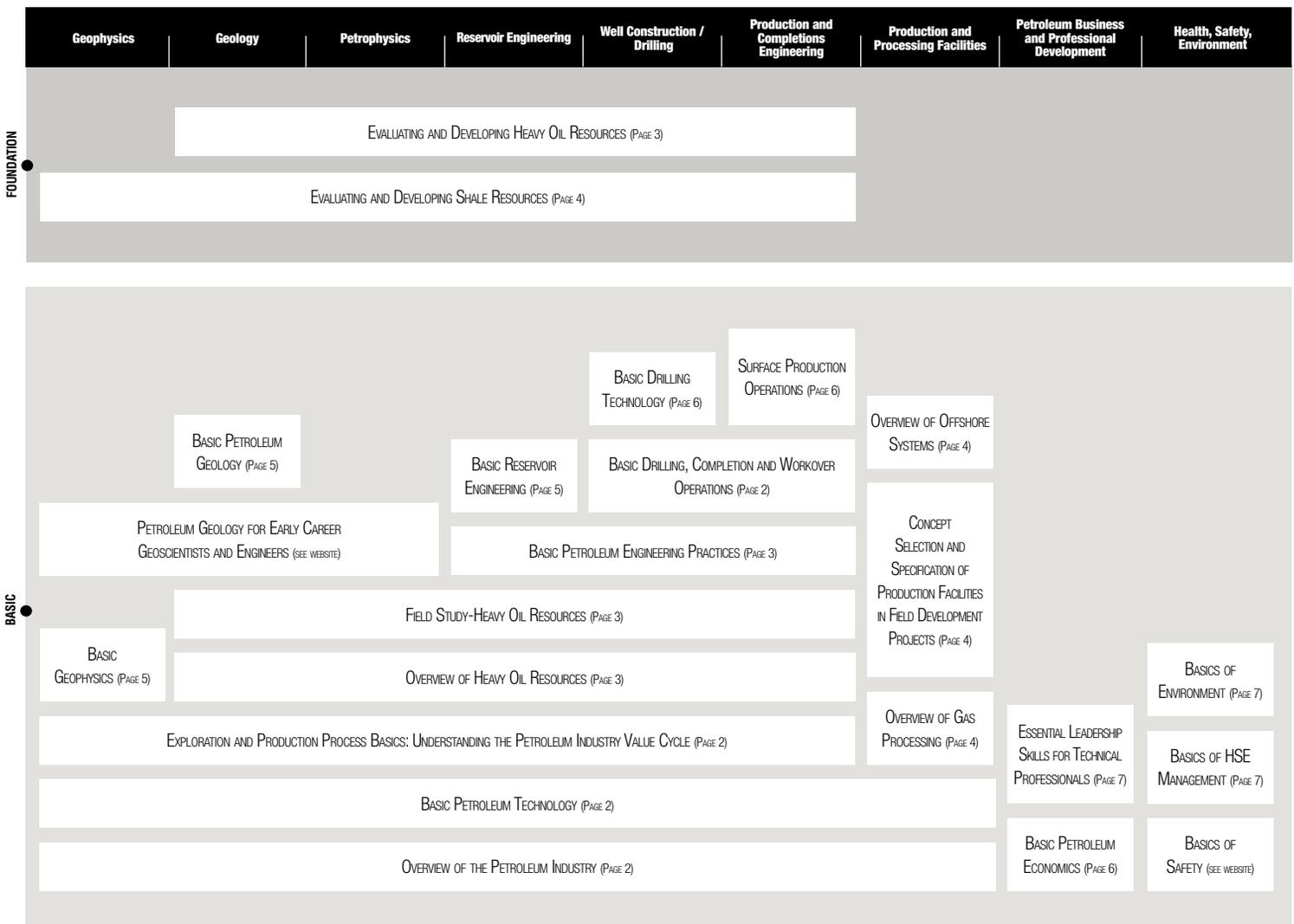
Introductory and Multi-Discipline Training Course Progression Matrix

Introductory and Multi-Discipline Training courses can benefit a variety of industry personnel. The matrix below outlines the disciplines to which each course applies.

Any of these three courses, **Overview of the Petroleum Industry** (2 days), **Basic Petroleum Technology** (5 days), and **Exploration and Production Process Basics** (10 days) are ideal for those in need of an industry introduction.

The following instructors have been selected and approved by the PetroSkills Curriculum Network:

MR. JEFF ALDRICH	MR. MASON GOMEZ	MR. LARRY LENS	MR. GERRY ROSS	MR. MARC SUMMERS
DR. ROSALIND ARCHER	DR. GREG HAZLETT	MR. BOB LIPPINCOTT	MR. STEVE SADOSKAS	MR. HUGO VARGAS
DR. OMAR BARKAT	MR. RON HINN	MR. ALAIN LOUIS	DR. KENT SAUGIER	
MR. STUART BRANSCUM	MR. DOUG HO	DR. GARY MASSINGILL	DR. HELMY SAYYOUH	
DR. ISKANDER DIYASHEV	MR. STEPHEN JEWELL	DR. HOWARD MCKINZIE	MR. RICHARD H. SCHROEDER	
MR. ERIC FOSTER	DR. SATISH KALRA	MR. BILL POWELL	DR. GEORGE E. SLATER	





Overview of the Petroleum Industry

– OVP

BASIC

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 resources 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 multiple 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 • Produce Asset – recovery optimization strategies

2016 Schedule and Tuition / 2 Days

HOUSTON, US	8-9 MAR	US\$2360
	3-4 OCT	US\$2360

Basic Petroleum Technology – BPT

BASIC

This course presents a non-technical, practical understanding of petroleum industry technology in an interesting and effective manner. Industry technology basics and terminology are learned by progressing through the E&P asset management cycle from exploration to abandonment. Participants are placed in the position of Reservoir Engineer, and "Our Reservoir" is defined, analyzed and put in production. Participants are then placed in the position of Drilling/Completion Engineer, and the drilling/completion program for "Our Well" is analyzed. Participation results in greater job confidence, enthusiasm and productivity. Basic Petroleum Technology is ideal for staff who need to be able to understand the various aspects of oil and gas operations and speak the language of the oilfield. The first day will give an introduction to the industry and cover reservoir fluids. The next two days will include petroleum geology and reservoirs, and introduce exploration technology. The fourth day will cover drilling engineering, operations, and well completion technology. The course will wrap up with production technology, reservoir development, and surface processing.

DESIGNED FOR

Administrative, support personnel, management, field support, accounting, purchasing, economics, legal, finance, human resources, drafting, land and data processing personnel, as well as investors and royalty owners. Participants involved at the technical level of the industry, particularly engineers, should register for the Basic Petroleum Engineering Practices course.

YOU WILL LEARN

- Terminology of exploration and production (language of the oil field)
- Basic geology as related to oil and gas reservoirs
- Reservoir fluid and rock properties
- Basics of seismic technology
- Reservoir definition and development; production and recovery
- Unconventional reservoirs
- Fundamentals of drilling, well completions and production operations
- Basic concepts of primary and enhanced recovery operations
- Surface operations

COURSE CONTENT

E&P asset management process overview • Reservoir fluid properties • Petroleum geology • The petroleum reservoir • Unconventional reservoirs • Exploration technologies • Drilling technology • Well completions and workovers • Production operations • Reservoir recovery mechanisms • Surface processing

2016 Schedule and Tuition / 5 Days

ABERDEEN, UK	14-18 MAR	US\$4570+VAT
HOUSTON, US	8-12 FEB	US\$3940
	11-15 JUL	US\$3940
	17-21 OCT	US\$3940
KUALA LUMPUR, MY	7-11 NOV	US\$4735
LONDON, UK	16-20 MAY	US\$4570+VAT
	8-12 AUG	US\$4570+VAT

Exploration and Production Process Basics: Understanding the Petroleum Industry Value Cycle – EPB

BASIC

This workshop describes the petroleum value chain from prospect identification, to project commissioning, to final abandonment. Participants will leave this course with a firm understanding of the petroleum industry, including the knowledge and tools necessary to understand the relationships and dependencies across the E&P industry. The course offers a fresh look at a range of critical, inter-related topics and will be taught with the modern learner in mind. Multiple tools, such as peer-based learning, internet resources, hands-on exercises, in-depth team workshops, and group discovery sessions, will be used to ensure learning retention and recall. Participants work as members of multi-disciplinary teams using real oilfield data in interactive workshops that illustrate technology/business concepts. Each team will be accountable for the results of their interpretations in a safe, constructive learning environment. Other skills will be learned in short hands-on exercises that reinforce the lectures. Lecturers are widely experienced oil field professionals who can share experiences from a number of technical settings and organizational approaches to give the students a broad view of the industry and its participants. The extended workshops conducted during the course include an exploration/discovery workshop, an appraisal workshop to define the static and dynamic models for a new discovery, and a facilities workshop in which the students fit the facilities to their newly-defined discovery. Uncertainties, risk management, business practices, and project management lessons are learned through these team events.

DESIGNED FOR

Newly-hired engineers and geoscientists.

YOU WILL LEARN

- Exploration/production overview
- Basic petroleum geology and geophysics principles
- Log interpretation basics
- Drilling basics
- Basic reservoir, production, and facilities engineering
- Business principles governing E/P

COURSE CONTENT

Opportunity identification • Elements of petroleum environment • Play to prospect to field technologies • Concessions and contracts • Find and define an asset • Appraise an opportunity • Build a field development plan • Facilities: gas, oil, design, construction, processing, maintenance, decommissioning • Building an effective team • Company/industry processes and procedures

2016 Schedule and Tuition / 10 Days

HOUSTON, US	16-21 MAY	US\$6890*
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*plus computer charge

Basic Drilling, Completion and Workover Operations – BDC

BASIC

This course presents the basics of drilling and completion operations, plus post-completion enhancement (workovers). Participants will learn to visualize what is happening "downhole", discover what can be accomplished, and learn how drilling and completion can alter reservoir performance.

No experience or prerequisites required.

Learn to communicate with drilling and production personnel.

DESIGNED FOR

Technical, field, service, support, and supervisory personnel desiring to gain an awareness of wellbore operations. Excellent for cross-training of other technical disciplines such as reservoir and facility engineers, geoscientists, supervisors, service personnel, and anyone who interacts with drilling, completion, or workover engineers.

YOU WILL LEARN

- How to comprehend drilling and workover reports
- What can be done within open-hole and cased wells, as a part of reservoir management
- How drilling practices can optimize cash flow and ultimate recovery
- How to communicate with drilling and production personnel

COURSE CONTENT

Overview of the drilling process • Language of drilling, completing, and well intervention • Drill string components: bits and accessories • Drilling fluids and hydraulics • Hole problems, stuck pipe, side-tracking and fishing • Cores and coring • Electric logging, MWD, LWD • Casing design and installation • Primary and remedial cementing • Directional, horizontal, multilateral, and under-balanced drilling • Wellhead equipment and trees • Options for completions and workovers • Tubing, packers, and completion equipment • Safety and flow control devices • Open hole completions • Perforating • Coil tubing operations • Wireline techniques • Well stimulation – surfactants, solvents, acidizing, hydraulic fracturing • Formation and sand control – mechanical retention, chemical consolidation, and gravel packing • Scale and corrosion • Directional drilling and multi-laterals • Scale and corrosion • Paraffin and asphaltene

2016 Schedule and Tuition / 5 Days

ABERDEEN, UK	8-12 FEB	US\$4570+VAT
DALLAS, US	27 JUN-1 JUL	US\$3900
HOUSTON, US	14-18 MAR	US\$3940
	23-27 MAY	US\$3940
	31 OCT-4 NOV	US\$3940
	5-9 DEC	US\$3940
KUALA LUMPUR, MY	14-18 NOV	US\$4735
LONDON, UK	15-19 AUG	US\$4570+VAT

Basic Petroleum Engineering Practices

– BE

BASIC

This course is a basic introduction to most aspects of the Petroleum Engineering discipline, which includes Reservoir, Production, and Drilling Engineering as well as related topics. This course lays the groundwork for further specialized training in advanced courses for oil company and service company personnel. The course focuses on the field and application approach and includes classroom exercises, fundamental engineering problems, and basic field exercises. Basic Petroleum Engineering Practices will set the foundation for technical professionals with regards to technology and its engineering applications. The course starts out with a brief introduction of the history and current state of the oil and gas industry. Next, reservoir fluids, petroleum geology, and petroleum reservoirs are discussed. Then, various facets of exploration technology, drilling engineering and operations, well completion technology, and production technology are covered before finishing with surface processing of produced fluids.

DESIGNED FOR

Engineers, engineering trainees, technical managers and assistants, technicians, geologists, geophysicists, chemists, physicists, service company personnel, sales representatives, and data processing personnel.

YOU WILL LEARN

- Basic petroleum geology
- Reservoir fluid and rock properties
- Fundamentals of reservoir fluid flow
- Oil and gas reservoir classification, definition, delineation, and development
- Unconventional resources
- Fundamentals of drilling, well completion, and production operations
- Basics of casing design and primary cementing
- Primary and enhanced recovery mechanisms
- Surface operations

COURSE CONTENT

Reservoir fluid properties • Petroleum geology • Reservoir properties and evaluation • Unconventional resources • Exploration technology • Drilling engineering • Well completion, stimulation, and workover • Well testing and formation damage • Production operations • Recovery methods • Surface processing

2016 Schedule and Tuition / 5 Days

ABERDEEN, UK	6-10 JUN	US\$4570+VAT
DENVER, US	1-5 AUG	US\$3950
DUBAI, UAE	8-12 MAY	US\$4990
HOUSTON, US	27 JUN-1 JUL	US\$3940
	29 AUG-2 SEP	US\$3940
	12-16 DEC	US\$3940
KUALA LUMPUR, MY	15-19 AUG	US\$4735
LONDON, UK	19-23 SEP	US\$4570+VAT

Field Study – Heavy Oil Resources – HOF5

BASIC

FIELD TRIP

This course is geologically and technically focused but instructed in such a manner that all disciplines and experience levels will understand. Mining and in-situ production of bitumen from the Athabasca oil sand region is currently a major contributor to the world's oil production. These technologies are reasonably recent commercial applications and the future levels of production face uncertainty because of highly debated environmental challenges. The field course takes the student to the rock; explaining complex relationships and issues emanating from the depositional and structural framework.

DESIGNED FOR

Anyone from any discipline who wants a hands-on understanding of the Athabasca Oil Sands.

YOU WILL LEARN

- How to understand the depositional and stratigraphic framework of the McMurray Formation
- How to understand the structural setting and relationships of timing, emplacement, and preservation of Alberta's bitumen/heavy oil resource
- The complex lithologic heterogeneities of the McMurray and their effect on mining and in-situ production
- To appreciate the challenges and progress of environmental preservation efforts for the development and production of Alberta's bitumen resource

COURSE CONTENT

Overview of the geology, history, and development of Canada oil sands • McMurray oil sand stratigraphy • Depositional details of the McMurray formation • Overview of structural evolution and bitumen resources • Oil sand mining methodology • Environmental challenges for Alberta's bitumen resources • Current status and future plans for reclamation mining activities

See website for dates and locations.

Overview of Heavy Oil Resources – HOOV

BASIC

Commercial mining and current in-situ thermal production methodologies are important contributors to the world's oil production. These technologies are reasonably recent commercial applications, and the future levels of production face uncertainty because of highly debated environmental challenges. This course takes an unbiased practical approach to the applications, citing benefits and limitations. Overview of Heavy Oil Resources provides an overview of the aspects of the geology, development, and commerciality of heavy oil resources. This course contains exercises and class problems to support the presentation. Each attendee will be given the facts to develop an overall understanding of heavy oil development.

DESIGNED FOR

Anyone from any discipline who needs a better understanding of heavy oil resources.

YOU WILL LEARN

- The geologic and engineering challenges to finding, developing, and producing heavy oil resources
- About the importance of heavy oil resources in today's world energy market
- How to evaluate the challenges and opportunities for understanding and improving the environmental footprint required to develop and produce heavy oil resources
- The contrast between heavy oil resources versus conventional and other unconventional resources with aspects of finding, developing, and producing
- The process and methodology to plan, design, implement, and evaluate heavy oil reservoirs
- About the geology and commerciality of the Canadian Oil Sands
- About the world-wide distribution and geologic setting of the more significant heavy oil occurrences including Venezuela

COURSE CONTENT

Comparison of conventional and unconventional reservoirs • Worldwide heavy oil resources and occurrences • Bitumen and heavy oil definitions and introduction • Geology, history, and development of Canada Oil Sands • Oil sand characteristics and development strategies • Oil sand mining details and reclamation • Oil sands in-situ project review • Introduction of Steam Assisted Gravity Drainage (SAGD) • Other commercial thermal in-situ methodologies • Environmental challenges for heavy oil resources • Geology and overview of Venezuela and Trinidad heavy oil resources • Commercial application of Cold Heavy Oil Production with Sand (CHOPS) in Venezuela • Introduction of United States heavy oil occurrences (Utah, California and Texas)

See website for dates and locations.

Evaluating and Developing Heavy Oil Resources – HOED

FOUNDATION

Cold production, oil sands mining and in-situ thermal production methodologies are important contributors to the world's oil production. The course takes an unbiased practical approach to the applications, citing benefits and limitations. The course provides an overview and details of specific occurrences of the geology, evaluation, development and commerciality of heavy oil/in-situ oil sands resources. Each attendee should come away with a great foundational knowledge of the business of evaluating and developing heavy oil resources.

DESIGNED FOR

Anyone from any discipline who needs a better understanding of heavy oil /oil sands resources, but more specifically designed for geoscientists or engineers with a need to better understand the challenges of evaluating and developing heavy oil/oil sands resources.

YOU WILL LEARN HOW TO

- Evaluate and develop heavy oil/oil sands resources
- Understand the importance of heavy oil/oil sands in today's world energy market
- Contrast heavy oil/oil sands resources as compared to conventional and other unconventional resources with aspects of finding, developing and producing
- Understand the geology, critical attributes, and commerciality of the Canadian Heavy Oil/Oil Sands
- Collect the appropriate data and evaluate the critical geologic and reservoir parameters of various types of heavy oil/oil sands resources
- Recognize and evaluate the environmental challenges required to develop and produce heavy oil/oil sands resources
- Understand the process and methodology to evaluate, select, plan, design, and implement a heavy oil/oil sands recovery project
- Become knowledgeable of the worldwide distribution and geologic setting of the more significant heavy oil occurrences

COURSE CONTENT

Bitumen and heavy oil Introduction • Comparison of conventional and unconventional reservoirs • Worldwide heavy oil/oil sands resources and occurrences • Geology and overview of Venezuela and Trinidad heavy oil resources • United States heavy oil occurrences • Geology, history, and development of Canada heavy oil/oil sands • Heavy oil/oil sands characteristics and development strategies • Oil sands mining details and reclamation • Environmental challenges for oil sands resources • Heavy oil and in-situ oil sands recovery process review • Introduction to Steam Assisted Gravity Drainage (SAGD) • Other commercial thermal in-situ methodologies • Commercial application of Cold Heavy Oil Production with Sand (CHOPS) in Canada and other non-thermal heavy oil recovery methods • Field examples and development strategies of heavy oil and in-situ oil sands recovery projects • Overview of thermal well completions and production facilities • Reserves and economics

See website for dates and locations.



Evaluating and Developing Shale Resources – SRE

FOUNDATION

This course will cover current practices for evaluating, drilling, and completing these challenging reservoirs. Discussions and exercises will include a focus on the limitations of many of the current tools and technologies. Information and opportunities for many current and international shale plays will be described. The participant should leave the course with a foundational understanding of value-adding shale gas resource practices and an insight into determining the critical reservoir and stimulation parameters used to predict a potential commercial resource play.

DESIGNED FOR

Reservoir, production and completion engineers, petrophysicists, geologists, geophysicists and other professionals who desire a thorough overview of shale resource development.

YOU WILL LEARN HOW TO

- Describe the resource potential and economic importance of shale gas and shale oil
- Describe the similarities/differences between shale gas, tight gas and coalbed methane
- Describe shale play differences and critical reservoir properties to identify "sweet spots"
- Estimate gas and oil in place
- Apply different resource evaluation techniques recognizing the advantages and disadvantages of each technique
- Apply drilling, completion, and stimulation technology to shale gas and shale oil
- Evaluate and forecast individual well and reservoir performance
- Determine how to estimate well reserves in both PDP (proved developed producing) and PUD (proved undeveloped) categories.

COURSE CONTENT

Current shale plays and their global impact • Organic quality, rock quality and mechanical quality properties; geological setting; rock properties; petrophysical considerations; the role of seismic data in field evaluation • Drilling: vertical vs. horizontal wells; pilot holes; fluids; MWD and LWD; wellbore sizes and lateral; drilling challenges; mechanical considerations • Completions: cased vs. open hole; perforation schemes; stimulation design and considerations; case histories • Field trials and pilots: pilot program to optimize well drilling, completion, understanding Stimulated Rock Volume (SRV) using microseismic, fiber optics, production logs, and other resources • Production forecasting and reserve calculations: volumetrics; performance analysis; simulation; resource development; decline curve analysis; handling uncertainty in estimates • Logistics, pad design, field development, water resources, and the social license

2016 Schedule and Tuition / 5 Days

DENVER, US	7-11 NOV	US\$4050*
HOUSTON, US	11-15 APR	US\$4040*
	12-16 SEP	US\$4040*
SAN ANTONIO, US	5-9 DEC	US\$4000*

*plus computer charge

Concept Selection and Specification of Production Facilities in Field Development Projects – PF-3

BASIC

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

2016 Schedule and Tuition / 5 Days

HOUSTON, US	25-29 APR	US\$4150
STAVANGER, NORWAY	21-25 NOV	US\$4780

Overview of Gas Processing – G-2

BASIC

G-2 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 or 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
- Options for various basic gas conditioning and processing steps, including treating, dehydration, liquid extraction, and product fractionation
- Summary of gas processing costs, commercial and contract issues in liquids extraction
- How gas is transported and sold
- Review of gas measurement and common measurement devices
- Key pieces of equipment used in natural gas production and processing facilities
- Overview of related specialty processes, such as LNG, nitrogen rejection, and helium recovery, plus sulfur recovery and acid gas reinjection

COURSE CONTENT

Natural gas and world energy trends • The role of gas processing in the natural gas value chain • Technical engineering principles (common conversions, gas density, phase behavior) • Gas sweetening • Gas hydrates and dehydration • Gas conditioning (dew point control) and NGL extraction • Stabilization and fractionation concepts and facilities • Gas processing key equipment and support systems (heat transfer, compression, pipelines and gathering systems, and measurement) • Specialty processes in gas processing (LNG, nitrogen rejection and helium recovery, sulfur recovery, and acid gas reinjection)

2016 Schedule and Tuition / 3 Days

HOUSTON, US	23-25 AUG	US\$2995
KUALA LUMPUR, MY	29 NOV-1 DEC	US\$3675
LONDON, UK	11-13 APR	US\$3475+VAT
PITTSBURGH, US	7-9 NOV	US\$3025

Overview of Offshore Systems – OS-21

BASIC

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

2016 Schedule and Tuition / 5 Days

HOUSTON, US	18-22 JUL	US\$4150
LONDON, UK	9-13 MAY	US\$4780+VAT



Basic Geophysics – BGP

BASIC

This course is designed to familiarize anyone using seismic data with the nature of the data and what it specifically represents. One of the key goals of the course is to explain the large and confusing amount of jargon that is used by the geophysical community when they use seismic data. The course is supplemented by a large number of case histories that concretely illustrate the principles in the course material. These are updated with every course presentation to keep up with the rapidly developing technology in this field. Each section of the course is supported with a classroom exercise. The course participants are given a data-thumb drive that contains the case histories, class exercises, and all of the extensive PowerPoint animations used in the classroom.

DESIGNED FOR

Geoscientists, engineers, team leaders, geoscience technicians, asset managers, and anyone involved in using seismic data that needs to understand and use this data as a communication vehicle.

YOU WILL LEARN

- How seismic data represent subsurface rock parameters including the relative structure, lithology, and pore filling material
- How land and marine seismic data are acquired and processed to produce both a two- and three-dimensional seismic image
- The limits of vertical and horizontal resolution inherent in the seismic data
- How seismic data are used to measure reservoir parameters and how data relate to reservoir development; this includes a detailed discussion of AVO and other seismic attributes
- The various approaches to seismic imaging and how the velocity model relates to this image
- How new technologies including seismic inversion have helped us to define rock properties including pore filling material, pore pressure, water saturation, and fracture orientation
- How to value developments such as time lapse seismic surveys for reservoir monitoring purposes

COURSE CONTENT

- The nature of seismic data
- What is wave propagation?
- What causes seismic reflections and how they relate to rock properties including pore filling material
- The wavelet in the seismic data and its limit of resolution
- Seismic velocities as they relate to rock properties and the imaging process
- The relationship between seismic velocities and pore pressure
- Pore pressure prediction
- Seismic data processing and seismic migration
- Prestack, poststack, time and depth imaging
- Direct hydrocarbon indicators and AVO
- Seismic inversion for rock and fluid properties
- Seismic attributes
- Time lapse reservoir monitoring (4D seismic surveys)
- Recent developments in seismic acquisition, processing, and interpretation

2016 Schedule and Tuition / 5 Days

BAKERSFIELD, US	24-28 OCT	US\$3900
COVINGTON, US	11-15 JUL	US\$3900
DENVER, US	14-18 MAR	US\$3950
HOUSTON, US	2-6 MAY	US\$3940
	15-19 AUG	US\$3940
	3-7 OCT	US\$3940

Basic Petroleum Geology – BG

BASIC

FIELD TRIP

What is Basic Petroleum Geology? For all practical purposes it closely resembles the freshman level course that a non-science major at a university would take to satisfy the science requirement. Presentation is oriented toward topics of interest to the petroleum industry. While high school chemistry and physics might help in understanding a very few selected topics, the course is designed for those with no technical training (and those who studiously avoided science in school). Primary objectives of the course are to broaden your geological vocabulary, explain selected geological principles and processes, and describe how certain petroleum reservoirs and source rocks are formed.

DESIGNED FOR

Petroleum industry personnel in need of basic geological training, including engineering, geophysical, technical support, and administrative personnel.

YOU WILL LEARN

- About plate tectonics and petroleum
- About geological time and history
- The fundamentals of rock formation and deformation
- The essentials of various depositional environments and the reservoirs created by them
- The distribution of porosity and permeability in reservoirs produced in different depositional environments
- How rock characteristics are related to modern geological processes and applied to the ancient record
- About petroleum reservoir and source rocks
- Of petroleum origin, migration, and trapping
- How to correlate electric logs and recognize depositional environments on logs
- How to make contour maps and cross sections
- Elements of geophysics and exploration
- How geology bears directly on engineering practices

COURSE CONTENT

Minerals and rocks • Plate tectonics • Geological time • Weathering and erosion • Deposition • Diagenesis • Reservoirs • Structural geology and petroleum • Origin, migration, and trapping of petroleum

2016 Schedule and Tuition / 5 Days

CALGARY, CANADA	13-17 JUN	US\$3900+GST
DENVER, US †	9-13 MAY	US\$4075
HOUSTON, US	14-18 MAR	US\$3940
	3-7 OCT	US\$3940
LONDON, UK	16-20 MAY	US\$4570+VAT

† includes field trip

Basic Reservoir Engineering – BR

BASIC

Basic Reservoir Engineering is a course designed to help the participants develop a more complete understanding of the characteristics of oil and gas reservoirs, from fluid and rock characteristics through reservoir definition, delineation, classification, development, and production. Data collection, integration, and application directed toward maximizing recovery and Net Present Value are stressed. Basic reservoir engineering equations are introduced with emphasis directed to parameter significance and an understanding of the results. The course includes class exercises designed to be solved with a calculator or spreadsheet. Participants are welcome to bring their own laptop computers.

DESIGNED FOR

Geologists, geophysicists, engineers, engineering trainees, technical managers, technical assistants, technicians, chemists, physicists, technical supervisors, service company personnel, sales representatives, data processing personnel, and support staff working with reservoir engineers and wanting to understand the process of reservoir definition, development, and production, or engineers newly placed in a reservoir engineering position.

YOU WILL LEARN

- How to collect and analyze the data needed for reservoir engineering tasks
- The fundamentals of fluid flow in porous media
- How reservoirs are characterized by fluid type and drive mechanisms
- The basis for reservoir fluid distribution
- About oil and gas well performance and pressure buildup analysis
- About oil displacement and optimizing reservoir performance
- The basics of enhanced oil recovery
- How oil and gas in place can be estimated and recovery predicted

COURSE CONTENT

Reservoir fluid properties • Coring practices and reservoir rock properties • Fundamentals of fluid flow • Reservoir fluid distribution • Reservoir classification • Reservoir drive mechanisms • Oil and gas well performance, including inflow and outflow concepts • Pressure buildup analysis • Oil displacement concepts • Estimation of oil-in-place and gas-in-place • Recovery techniques

2016 Schedule and Tuition / 5 Days

ABERDEEN, UK	12-16 DEC	US\$4570+VAT
BAKERSFIELD, US	7-11 NOV	US\$3900
CALGARY, CANADA	7-11 MAR	US\$3900+GST
DENVER, US	23-27 MAY	US\$3950
HOUSTON, US	1-5 FEB	US\$3940
	4-8 APR	US\$3940
	8-12 AUG	US\$3940
	28 NOV-2 DEC	US\$3940
JOHANNESBURG, SOUTH AFRICA	5-9 SEP	US\$5230
KUALA LUMPUR, MY	22-26 AUG	US\$4735
LONDON, UK	21-25 MAR	US\$4570+VAT
PERTH, AUSTRALIA	8-12 FEB	US\$4800+GST



Basic Drilling Technology – BDT

BASIC

FIELD TRIP

This basic drilling technology course addresses the technology used to drill wells from a fundamental view point. Equipment and procedures involved with drilling oil and gas wells are described for those who are interested in understanding the drilling process regardless of academic background. During the first day, the overall drilling process is presented along with definitions and descriptions of drilling equipment. This provides the vocabulary to understand the drilling process. During the remainder of the week, the various components and procedures are discussed in greater detail with explanations of the basic science concepts which guide these processes. Subjects include descriptions of drill bits, directional drilling, drilling fluids, solids control, cementing, casing, well bore stability, well control, measurement-while-drilling techniques, stuck pipe, lost circulation, and well bore hydraulics. Some technology enhancements are included to improve understanding of drilling operations for all participants, with or without a science background. A discussion of clay mineralogy helps understand well bore instability and drilling fluids. A discussion of pressure and pressure effects helps explain many of the procedures and problems associated with drilling wells. Rocks behave differently under pressure and understanding this behavior helps in understanding drilling performance.

Some discussions of the art and science of drilling include mathematical explanations for those involved with the engineering aspects of drilling operations; however, the concepts and intent of these mathematical equations will also be explained in simple terms. After all various components and procedures are discussed, the information contained in morning reports is explained and used as a summary of the course content.

DESIGNED FOR

Petroleum and production engineers, completion engineers, geoscientists, managers, technical supervisors, service and support personnel, entry level drilling engineers, drilling operations personnel, drilling office support staff.

YOU WILL LEARN

- About drilling equipment and how it is used
- Drilling terminology and abbreviations
- Keys to planning a successful well
- Common drilling problems and how to avoid them
- How to read a morning report
- Technology behind information in a morning report

COURSE CONTENT

- The overall drilling process and equipment
- The language of drillers—understanding their terminology
- Understanding the abbreviations and acronyms associated with drilling
- Rig equipment and types
- Types of drill bits
- MWD
- Drill strings
- Drilled solids management
- Mud tank arrangements
- Drilling fluid properties
- Well control
- Cementing
- Casing design
- Hole problems (stuck pipe, lost circulation)
- Well control
- Directional drilling operations and tools
- Safety

2016 Schedule and Tuition / 5 Days

HOUSTON, US †	22-26 FEB	US\$3940
	18-22 APR	US\$3940
	18-22 JUL	US\$3940
	19-23 SEP	US\$3940
	7-11 NOV	US\$3940

† includes field trip

Surface Production Operations – PO3

BASIC

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.

DESIGNED FOR

All field, service, support, and supervisory personnel having interaction with facilities engineers and desiring to gain an awareness level understanding of the field processing of production fluids.

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 metering 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 floatation, 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, head, turbine, and others • Corrosion/Scales: inhibition and treatment

2016 Schedule and Tuition / 5 Days

CALGARY, CANADA	14-18 MAR	US\$3900+GST
HOUSTON, US	16-20 MAY	US\$3940
	24-28 OCT	US\$3940

Basic Petroleum Economics – BEC3

BASIC

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. Individuals may wish to participate in either this course or Expanded Basic Petroleum Economics, which is the five day version that includes expanded material covering finance, accounting, and budgeting.

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 effecting 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

2016 Schedule and Tuition / 3 Days

CALGARY, CANADA	11-13 APR	US\$2925+GST
DENVER, US	8-10 AUG	US\$2955
HOUSTON, US	1-3 FEB	US\$2955
	2-4 MAY	US\$2955
	11-13 JUL	US\$2955
	10-12 OCT	US\$2955
KUALA LUMPUR, MY	15-17 AUG	US\$3550
LONDON, UK	6-8 JUN	US\$3430+VAT
	12-14 SEP	US\$3430+VAT
SAN FRANCISCO, US	14-16 NOV	US\$2925



Essential Leadership Skills for Technical Professionals – OM23

BASIC

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 learn how to combine them with new skills for greater effectiveness. This seminar/workshop will include self-assessment, discussion, lecture, 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 clearer thinking
- Learn assessment techniques for yours and other's people 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 leadership • Listening • Motivation • Group dynamics • Conflict management • Team-building • Critical thinking and taking action

Basics of Environment

– HS13

BASIC

Provide proof of your environmental credentials anywhere in the world with the NEBOSH Certificate in Environmental Management. Our program starts in advance of the taught course, as participants undertake a review of their own site's environmental performance using documentation supplied to them. This review sets the context for this five day class, which comprises a blended learning approach with tutorials, workshops, problem-solving and practical activities. At the end of the course, there is a formal examination and project, successful completion of which results in the award of the NEBOSH Certificate in Environmental Management.

DESIGNED FOR

Managers, supervisors, and employees throughout the world who have responsibility for managing environment issues as part of their day to day duties. This course is particularly suitable for entry level HSE professionals, as the NEBOSH Certificate in Environmental Management is the first step in a career in environmental management.

YOU WILL LEARN

- Environmental management, and what this means for your organization
- Ethical, legal, and financial reasons for maintaining and promoting environmental management
- The importance of sustainability
- Principles and sources of environmental information
- The purpose and importance of setting environmental policy
- Key features and content of an effective environmental management system (EMS) such as ISO 14001
- Active (leading) and reactive (lagging) monitoring, including inspections and investigations of environmental incidents
- Environmental impact assessments (EIA)
- Emissions to atmosphere and abatement measures
- Water pollution and methods to avoid contamination of water resources
- The importance of and techniques for minimizing waste
- Risks associated with contaminated land
- Energy efficiency
- Potential sources and consequence of environmental noise and nuisance
- Emergency preparedness and response
- Environmental auditing, and reporting the results to management
- NEBOSH examination and project (optional).

COURSE CONTENT

Foundations in environmental management • Environmental management systems • Assessment of environmental impacts • Control of emissions to air • Control of contamination of water resources • Solid waste and land use • Sources and use of energy and energy efficiency • Control of environmental noise • Planning for and dealing with environmental emergencies • NEBOSH Examination and Project



See website for dates and locations.

Basics of HSE Management – HS18

BASIC

Recognition and effective management of HSE risks/impacts is a fundamental requirement of companies operating in our sector.

This course provides participants with the underpinning knowledge on how to specify and implement an effective HSE management system at the technical level. The course is based upon a common HSE management system which explains the elements and their interaction.

A variety of exercises and case studies based on our Petros on- and off-shore case studies, as well as readings and videos will be used to develop understanding and practice the skills.

The course is designed for the oil, gas and petrochemicals industries around the PetroSkills competence maps for HSE Management at the "Awareness" level.

This class can be taken alone, or together with our Basics of Safety (HS10). It provides the underpinning knowledge for participants seeking a career first-step qualification - the NEBOSH International General Certificate in Occupational Health and Safety (IGC).

For holders of the NGC gained within the last five years, this class provides for conversion to the IGC (upon request).

DESIGNED FOR

All workers requiring basic awareness and/or a qualification in HSE management. These may include field/operations staff, office workers, engineers, supervisors, project managers, and aspiring HSE professionals.

It is ideal for anyone with no prior HSE management knowledge.

YOU WILL LEARN

- The principle elements of an HSE management system, and how these interact to promote performance improvement
- How to use ISO 14001, OHSAS 18001/ISO 45001, HSG65, and ILO OSH-2001
- Key tools for assessing risks, risk control, and active/reactive monitoring
- The roles and responsibilities of individuals within the management system and how these can affect the safety culture of the organization
- Examination techniques for the NEBOSH IGC1 exam (if required)

COURSE CONTENT

Leadership, policy, objectives • Responsibilities, resources and competence • Risk assessment and control • Planning, safe systems of work • Contractor controls • Emergency preparedness and response • Incident reporting and investigation • Inspections and audits • Management review

2016 Schedule and Tuition / 5 Days

LONDON, UK 14-18 MAR U\$4570+VAT

2016 Schedule and Tuition / 5 Days

HOUSTON, US 29 FEB-4 MAR U\$3860
ORLANDO, US 5-9 DEC U\$3920



TO VIEW OUR COURSES IN OTHER DISCIPLINES, VISIT:

Subsurface

- Introductory/Multi-Discipline
- Geology
- Geophysics
- Petrophysics
- Reservoir Engineering
- Well Construction/Drilling
- Production & Completions Engineering
- Unconventional Resources
- Integrated - Heavy Oil
- Petroleum Data Management

Facilities

- Gas Processing
- Process Facilities
- Water & Corrosion
- Offshore
- Pipeline
- Instrumentation, Controls, & Electrical
- Mechanical
- Reliability Engineering
- Procurement/Supply Chain Management
- Refining

Operations & Maintenance

Health, Safety, Environment

Petroleum Business and Professional Development

- Petroleum Professional Development
- Petroleum Business
- Project Management

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