

OIL AND GAS courses

Course Topic Overview of the Petroleum Industry

Course Code:1104

Course Duration : BASIC/ 2days

Course Introduction

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.

Course Objective

- 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.
- 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
- 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

Course Topic: **Basic Petroleum Technology**

Course Code:1105

Course Duration: Basic 5-10 days

Course Introduction:

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 geo science and engineering professionals use technology to determine and then optimize the economic value of an oil and gas field.

Course Objective:

- The E&P Process, the role of each technical department and specialist, and the technologies used
- The economic value and properties of reservoir fluids
- Exploration and appraisal technologies
- Drilling operations for exploration, development and production
- Production - well completions and production technology

COURSE Summary

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

Understanding the Petroleum Industry Value Cycle

Course Code:1106

Course Duration: Basic /10 days

Course Introduction:

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.

Course Objective:

- 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 Summary

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 Exploration and Production Process Basics:

Basic Petroleum Engineering Practices

Course Code:1107

Course Duration: Basic 5-10 days

Introduction

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.

Course Objective:

- 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
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COURSE Summary:

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
Basic Petroleum Engineering Practices

Structural Styles in Petroleum Exploration

Course Code:1108

Course Duration: Basic 5-10 days

Course Introduction

Even with the best of data, the correct interpretation of a subsurface structure usually requires recognition of the fundamental characteristics of the assemblage in which it occurs and the range of trap styles to be expected. This course provides an overview of all hydrocarbon-bearing structural assemblages and their associated trap types.

Course Objective

- Recognize all the different hydrocarbon bearing structural styles in map and cross- section
- Distinguish the characteristics of each structural style on seismic reflection profiles
- Recognize the arrangement of structural styles and traps within structural families

COURSE Summary

Comparative structural geology • Structural families and styles • Mechanical principles governing fold and fault geometry • Predicting Structure from stratigraphy • Folding vs. faulting • Palinspastic restoration of cross sections • Structural validation criteria • Sequential restoration and growth history • Regional arches and domes • Compaction and substratal Solution • Wrench faults: simple, convergent, and divergent • Conjugate and domino-style strike-slip regimes • Thin-skinned fold-thrust belts • Fault-related folds • Duplexes • Basement-involved contraction • Vertical and rotational block uplifts • Inversion: dip-slip to strike-slip • Thin-skinned extension • Basement-involved extension • Half-graben and full graben rift systems • Domino-style extension • Diapirs • Salt sheets • Roho and counter-regional pseudoextensional fault systems • Plate-tectonic habitats of structural assemblages • Tectonic synthesis and exploration project.

Deepwater Well Engineering

Course Code:1109

Course Duration: Intermediate/ 5 -10 Days

Course Introduction

This course is designed to promote understanding of well design and engineering capabilities unique to the deep water environment. Participants are actively engaged in the skills and activities required to deliver a cost-effective well plan, while also gaining valuable perspective on the role of a DW drilling engineer as a project manager.

Prerequisite Required:

The ten day, Well Design and Engineering (WDE) course, or its equivalent, is highly recommended as a pre-requisite.

Course Objective:

- Understand and manage technologies, practices, and design methodologies unique to the DW environment
- Analyze and utilize offset well data important for DW planning and well design
- Identify key issues and risks related to floating operations and rig selection
- Manage challenging logistics and unique equipment/supply chain issues
- Clarify the potential impact of geohazards, such as shallow gas and water flows, hydrates, salt, and tar
- Identify well control constraints and calculate kick tolerance

COURSE Summary

Floating drilling rigs and equipment • Unique challenges of deepwater • Shallow hazards • Deepwater planning cycle • Subsea BOP equipment • Subsea well control issues • Structural pipe design for bending • Riserless drilling • Casing shoe depth considerations in DW • Annular pressure buildup in casing strings • Regulatory requirements • Subsea cementing process • Subsea wellheads and trees • Hydrates • Drilling fluid issues in DW • Slip crushing for drillstring design • Landing string design • Salt drilling • Relief well planning for DW • DW risks • Abandonment of

subsea wells • Awareness of the basics of Managed Pressure • Drilling and other emerging technologies

Course Topic : Casing and Cementing

Course Code:1110

Course Duration: Basic/ 5-10 Days

Course Introduction

This course builds a firm foundation in the principles and practices of designing, planning and conducting successful casing and cement jobs.

Course Objective:

- Selection of casing sizes and setting depths to achieve well objectives
- Determination of casing loads for design purposes
- To design casing properties to meet burst, collapse, and tensile strength requirements
- To conduct casing running operations safely and successfully
- Specification of cement slurry properties and volumes to meet well objectives
- Determination of best procedures for attaining successful primary cementing
- To conduct stage jobs, squeeze jobs, and set cement plugs

COURSE Summary

Selecting casing and hole sizes • Setting depths • Casing loads • Selecting casing and connections • Casing stress calculations • Cement and cement additives • Selecting appropriate slurries • Mud removal and cement placement • Stage cementing, squeezes, and plugs • Preventing gas migration • Cementing calculations • Cementing equipment • Wellhead equipment

Course Topic : Rudiments of Casing Design

Course Code:1110

Course Duration: Foundation/ 5 Days

Introduction

Casing design is an integral part of a drilling engineer's work scope. This course provides a comprehensive overview of the design process, emphasizing the working stress approach currently used in the industry. On completion of this course, successful participants will be able to select casing points, identify tubular requirements and loads, and design and specify the required casing string.

Course Objectives:

- Select casing setting depths based on pore and fracture pressure data as well as other criteria
- Determine casing and bit sizes, and alternatives for contingencies and special clearance situations
- Identify and define load cases to meet specific design requirements
- Apply standardized design factors to meet specific design requirements and identify the controlling design load for each string in the well

COURSE Summary

Goals of casing design • Types of oilfield tubulars and connections • Casing point selection and size determination • Load estimation methods for casing and liners • Typical design factors • Theories of strength and failure (standard collapse, burst, axial; yield basis for combined loads) • Design examples and exercises for all key loads and strings • Casing handling, running, and hanging practices

Course Topic: Rudimentary Drilling Technology

Course Code:1112

Course Duration: Foundation 5 -10 Days

Course Introduction

Ability 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 regardless of academic background. The overall drilling process is presented along with definitions and descriptions of drilling equipment. This provides the vocabulary to understand the drilling process.

Course Objective

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

COURSE Summary

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

Course Topic : Drilling Practices - DP

Course Code:1112

Course Duration: Foundation / 10 Days

Introduction

The two-week course is designed for engineers and field personnel involved in the planning and implementation of drilling programs. This course covers all aspects of drilling technology, emphasizing both theory and practical application. Drilling is a complex operation requiring the marriage of different technologies and disciplines. Today's drilling personnel must have a working knowledge of all these disciplines in order to effectively drill a well.

Course objective:

- Review drilling data and plan the well
- Incorporate completion plans into the drilling plan
- Drill a well cost effectively and maximize penetration rate
- Evaluate stuck pipe problems and avoid potential problems
- Evaluate and maintain drilling fluids
- Optimize hole cleaning

COURSE Summary:

Planning including requirements for the completion and testing, AFE preparation
• HSE at the rig site • Cost control, evaluating alternative drilling methods and maximizing penetration rate • Hole cleaning, sloughing shale, lost circulation, stuck pipe and fishing operations • Drilling fluids • Lifting capacity of drilling

fluids, pressure losses in the circulating system and ECD • Maximizing hydraulics in the planning phase and at the rig • Bit selection and application • Casing and drill string design, selection of casing seats, BOP equipment • Cement, cement additives and displacement mechanics • Deviation control, directional drilling and horizontal drilling • Pressure control, routine and special problems • Project post analysis

Course Topic: Basic Reservoir Production

Course Code:1113

Course Duration: Foundation / 10 Days

Course Introduction

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.

Course Objectives

- 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 optimize reservoir performance
- The basics of enhanced oil recovery
- How oil and gas in place can be estimated and recovery predicted

COURSE Summary

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 gasin- place • Recovery techniques Gas Reservoir Management

Course Topic: ***Gas Reservoir Engineering***

Course Code:1114

Course Duration: Specialized - 3 weeks (hands-on practical)

Course Introduction

Natural gas production has become a major part of every petroleum company's asset base and continues to grow in importance throughout the world. This course will help participants understand the engineering drivers on gas reservoir management and how a gas reservoir's value can be maximized through sound engineering practices. A full spectrum of techniques is addressed and their application to a large variety of gas resource management options is discussed.

Course Objective:

- Evaluate gas reservoir data and prepare this data for engineering calculations
- Apply frequently used gas reservoir engineering techniques
- Perform production decline type curve analysis and use other advanced reservoir calculations such as simulation
- Solve reservoir engineering calculations through the use of many practical exercises Gas reservoir fluid properties: gas condensate sampling and understanding laboratory reports

COURSE Summary

Gas reservoir fluid flow and well testing: deliverability testing and non-darcy flow, testing for hydraulically fractured wells, horizontal wells, and gas condensate reservoirs • Determination of original gas-in-place: material balance techniques for various drive mechanisms and reservoir types, alternate plotting techniques, production decline type curves • Gas flow in wellbores and pipelines: the gas production system, pressure drop in wellbores and flowlines, restrictions to gas production • Prediction of future performance and ultimate recovery: decline curves, coupled material balance and deliverability techniques, reservoir simulation, gas well spacing and infill drilling • Special topics • Reservoir management of water-drive gas reservoirs, predicting gas condensate reservoir performance, coalbed methane reservoirs.

Course Topic; Production Operations

Course Code:1115

Course Duration: Foundation/ 10 DAYS (HANDS- ON PRACTICAL)

Course Introduction

This course represents the core foundation course of 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.

Course Objective:

- 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
- Review heavy oil development and extraction including mining operations and current modern thermal processes

COURSE Summary

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

Course Topic: Completions and Workovers

Course Code:1116

Course Duration: Foundation / 10 Days

Course Introduction

An integrated introduction to many facets of Completion and intervention technology The material progresses through each of the major design,

diagnostic, and intervention technologies concluding with some common remedial measures and well abandonment. The course focuses on the practical aspects of each of the technologies, using design examples - successes and failures - to illustrate the key points of the design and the risks/uncertainties.

Course Objective:

- Develop a high level completion strategy for wells in a variety of situations
- Select tubing, packers, and completion flow control equipment
- Appraise/design a flow barrier strategy
- Select intervention strategy/equipment
- Identify key features/applicability of the main sand control and well stimulation options
- Assess/specify concerns/remedial measures for formation damage/skin removal

COURSE Summary:

Basic well completion design, practices, and strategies • Well quality and integrity • Safety aspects of well design • Wellheads, trees, subsurface safety valves, and flow control equipment • Material selection guidelines based on corrosion and erosion conditions • Interpretation of inflow and tubing performance to aid tubing size selection • Tubing design and selection • Considerations for designing deviated horizontal, multilateral, and multi zone reservoir completions • Basic completion principles and considerations for subsea, and unconventional wells • Perforating job selection and design • Formation damage mechanisms and remediation • Stimulation design considerations • Sand control options and their selection • Wireline, coiled tubing, and hydraulic workover rig operations • Snubbing.

Course Topic: Surface Production Operations

Course Code:1117

Course Duration: Basic/ 5-10 Days

Introduction

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.

Course Objective:

- 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
- 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

COURSE SUMMARY

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

Coiled Tubing Interventions

Course Code:1118

Course Duration: foundation/ 5-10 Days

Introduction

Coiled Tubing is one of the most common technologies used for well intervention on a daily basis throughout the oil industry during drilling, completion, and mainly production phases of oil and gas wells around the world.

YOU WILL LEARN HOW TO

- Improve the overall operational performance during coiled tubing interventions
- Select or recommend coiled tubing equipment for given field conditions and applications
- Select the proper pressure control equipment for any particular well condition
- Calculate the appropriate size of accumulators for a coiled tubing unit
- Select the most commonly used downhole tools and explain their function
- Calculate and define coiled tubing string limits
- Recognize, prevent, and manage corrosive and sour conditions and their impact

COURSE SUMMARY

Introduction • Surface equipment • Pressure control equipment • Bottomhole assembly components • Pumping operations • Mechanical operations • CT drilling operations • Coiled tubing strings • Operational limits • Life estimation (fatigue) • Corrosion • String management • Checklists • Nitrogen • Emergency responses and contingencies

Course Topic: Gas Lift

Course Code:1118

Course Duration: Intermediate/ 5 -10Days

Course Introduction

Gas lift is one of the most widely used artificial lift techniques. Participants will investigate the impact of tubing sizing, gas lift valve selection, gas lift mandrel spacing, gas lift valve design, casing pressure, surface choke size, gas volume, etc., on well design and operation.

Course Objective:

- Select the appropriate gas lift systems and equipment
- Design continuous-flow gas lift systems
- Analyze operating gas lift systems
- Increase production from your wells using gas lift technology and optimization
- Improve the economics of gas lift operation

COURSE Summary

Gas lift concepts and data • Inflow/Outflow • Nodal analysis • Equilibrium curves • Gas lift equipment and valve mechanics • Valve selection and calibration • Unloading • Mandrel spacing and step-by-step, complete gas lift design for a well • Temperature effects on valves • Determine the P_{tro} • Orifice sizing techniques • Lift gas rates for best economics • Causes and solutions of instability • Gas lift surveillance and measurement • Analysis of flowing pressure gradient surveys • Analysis of GL surface charts and measurements • Gas allocation and field optimization • Use of computer programs for gas lift design, troubleshooting, and optimization

MID STREAM COURSES

**HEALTH AND SAFETY
COURSES**

MURPHY'S MARION CONSULTS

Course Topic: Basics of HSE Management

Course Code:1119

Course Duration: Basic/ 5-10 Days

Course Introduction

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.

Course Objective:

- The principle elements of an HSE management system, and how these interact to promote performance improvement
- 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

COURSE SUMMARY

Leadership, policy, objectives • Legislation and regulation of HSE • 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

Course Topic Contractor Safety Management

Course Code:1120

Course Duration: Foundation/ 5-10 Days

Introduction

Due to Contractors minimal operational shift Hours, it is important to prequalify, select, mobilize, execute, demobilize, and close out contracted activities to a high standard. An effective relationship between clients and contractors at all stages of the supply chain is essential for competently managing health and safety in a facility or project.

Course Objectives

- Implement a contracting supply chain strategy based on the risks and benefits of outsourcing high risk, low risk, and specialist activities
- Develop a contracting strategy based on prequalification
- Prepare a program to initiate the use of competent contractors based on bid documents covering HSE and other relevant criteria
- Communicate effectively with contractors, including reporting requirements for incidents and emergency preparedness
- Develop a program for supply chain performance monitoring

COURSE CONTENT

Supply chain strategies • Management systems - API 2220, OGP guidelines, and others • Prequalification - bidding, evaluation criteria, appointment • Contractor selection • Mobilization, execution and demobilization • Supply chain performance monitoring and auditing • Final evaluation and close out

Course Topic: Fundamentals of Process Safety

Course Code:1120

Course Duration: Foundation/ 5 - 10 Days

Introduction

The course will cover the fundamentals of Process Safety for all staff levels of processing facilities in the upstream and downstream oil, gas, and petro - chemical industry.

Course Objectives:

- 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

COURSE CONTENT:

Business context for Process Safety • Risk assessment [hazard identification, hazard scenarios, consequence & likelihood analysis, and risk analysis and tools & 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 • Selfverification and measurement • Process safety key performance indicators • Management review and auditing • Process safety leadership [governance and culture]

Course Topic: Applied Maintenance Management

Course Code:1121

Course Duration: Basic/ 5 Days

Course Introduction

No matter the price of oil, safe, efficient operations require well managed, integrated asset management. Effective, well organized maintenance management is the key.

Course Objective: 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 Summary:

World class standards • Maintenance strategies• Planning and scheduling • Optimizing preventative and predictive maintenance • Identifying critical equipment • Utilizing your CMMS Supplier certification • Developing organizational competence • Presenting your action plan

Course Topic: Introduction to Data Management

Course Code:1122

Course Duration: Basic/ 2Days

Introduction

This course provides an overview of data management in E&P, focusing on the subsurface domain.

Course Objective:

- What is data management, why it is important, understanding of data as an asset, its lifecycle, benefits of good data management, and its potential value
- The core data types in the E&P industry and valuable best practices for them
- Common data management issues and challenges, and the impact on the business
- The important components of a data management framework

- How to map issues onto a data management framework

COURSE summary :

Data Types: Definitions • Common Data Management Issues: Causes Of Data Issues, Data Management Best Practices, Business Impact • Overview Of Data Management: Definition, Data Lifecycle, Importance And Value Of Data Management, Benefits Of Good Data Management, Business Case Aspects And Barriers • Data Management Framework: Governance, Architecture, Security, Reference And Master Data Management, Data Quality Management.

MURG'S MARION CONSULTS

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MIDSTREAM/ DOWNSTREAM TRAINING COURSES

MURG'S MARITON CONSULTING

Course Topic: Overview of Gas Processing

Course Code:1123

Course Duration: Basic/ 3-5 Days

Introduction

This course 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.

YOU WILL LEARN:

- An overview of natural gas and world energy trends
- Natural gas sources, makeup, properties, specifications, and related oil and gas terminology
- Summary of gas processing costs, and commercial and contract issues in liquids
- 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)

Course Topic: Process Safety Engineering

Course Code:1124

Course Duration: Foundation/ 5-10 Days

Course Introduction

This course provides an overview of process safety engineering fundamentals for hydrocarbon processing facilities, with emphasis on the upstream oil and gas sector.

YOU WILL LEARN:

- Types of equipment and process systems that have historically been problematic in the Upstream and Midstream oil and gas industry
- Basics of risk analysis
- Thinking in terms of Inherently Safer Design
- Most common process hazard analysis methods and where they are used
- Layers of Protection concept - what the different layers are and how they are applied

COURSE Summary

Historical incidents and problem areas • Risk analysis basics • Process hazards analysis techniques - overview • Layers of protection • Inherently safer design • Hazards associated with process fluids • Leakage and dispersion of hydrocarbon releases • Combustion behavior of hydrocarbons • Sources of ignition • Hazards associated with specific plant systems • Plant layout and equipment spacing • Pressure relief and disposal systems • Corrosion and materials selection • Process monitoring and control • Safety instrumented systems • Fire protection principles • Explosion protection

***Course Topic: Introduction to Oil and Gas Production
Facilities***

Course Code:1125

Course Duration: Basic/ 3-5 Days

Introduction

The scope of the discussion ranges from and 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.

YOU WILL LEARN:

- 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
- 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

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

**Course Topic : Oil Production and Processing
Facilities**

Course Code:1126

Course Duration: Foundation/ 5 Days

Course Introduction

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

Court Objective:

- 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

COURSE Summary

• 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, asphaltenes, and scale• Pipeline transportation of crude oil• Pumps• Produced water treatment• Water injection systems• Solution gas handling

Course Topic: Separation Equipment -Selection and Sizing

COURSE CODE: 1145

COURSE DURATION: INTERMEDIATE 5-DAYS

This course covers the different types of separation equipment typically encountered in oil and gas production facilities.

Course Objective:

- 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

Course Summary

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, Weirs, Etc. • Emulsions • Oil-Water Separation Equipment: Conventional 3-Phase Separators And Freewater 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

Course Topic: Relief and Flare Systems

COURSE CODE: 1175

COURSE DURATION : 5-10 DAYS

COURSE INTRODUCTION: This intensive course provides a comprehensive overview of relief and flare systems for oil and gas processing 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/relieving pressures to meet operational, safety, and code requirements

COURSE Summary

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/Depressurizing - 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/Flare 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

Course Topic: Onshore Gas Gathering Systems: Design and Operations

COURSE CODE: 1198

COURSE DURATION : 3WEEKS

Course Introduction

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.

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 Summary

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

Course Topic : Fundamentals of Pump and Compressor Systems

COURSE CODE: 1177

COURSE DURATION: 5-10 DAYS

Course Introduction

This is an intensive 5-10 day course providing a comprehensive overview of pumps and compressor systems.

Course Objective

- 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

COURSE Summary

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

Course Topic: Compressor Systems -Mechanical Design and Specification

COURSE CODE:1154

COURSE DURATION: 5-10 DAYS

Course Introduction:

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.

Course Objectives

- 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

COURSE Summary

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

Electrical Engineering Fundamentals for Facilities Engineers

COURSE CODE: 1255

COURSE DURATION: 10 DAYS

Course Introduction

This course applies fundamental electrical engineering principles to oil and gas facilities.

Course Objectives

- The key components of facilities electric power distribution, which include circuit arrangements, low and medium voltage switchgear, and single-phase and three phase schemes
- Operation, components, electromotive forces, turns and voltage ratios, losses, efficiency, rating, and connections of transformers
- The difference between direct current, induction and synchronous current motors, motor enclosures, and how to select motors

COURSE Summary

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 Principles • Grounding,
Bonding, And Electrical Safety • Hazardous Area Identification

Course Topic: Pipeline Systems Overview

COURSE CODE: 1267

COURSE DURATION: DAYS

This course that provides awareness level training for engineers new to the hazardous liquid and gas pipeline industry.

Course Objective

- Basic concepts of liquid and gas pipeline economics
- Pipeline design overview
- Construction methods and challenges
- Essential operations

COURSE SUMMARY

The Business Model And Value-Added Premise Of Pipelines And Their Role In The Overall Energy Value Chain • The Advantages And Limitation Of Pipelines, And The Scope And General Structure Of The Industry • The Key Components And Facilities That Are Integrated Into Pipeline Systems • How To Recognize Regulatory Codes And Industry Guidelines (API And Others) That Control The Permitting, Design, Construction, Operations, And Maintenance Of Pipeline Facilities •

Course Topic: Terminals and Storage Facilities

COURSE CODE: 1855

COURSE DURATION: 5 -10 DAYS

Course Introduction

This 5- 10 day, foundation level course reviews key issues associated with development, design, construction, and operation of terminals and storage facilities for liquid hydrocarbons and NGLs.

Course Objectives

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

COURSE Summary

Sizing Criteria And Economics For Storage And Terminal Facilities • Various Storage Types (Atmospheric Storage Tanks, Pressure Vessels, Salt Or Rock Caverns) And Appropriate Applications • Terminal And Tank Farm Layout Constraints • Details Of Industry Codes And Standards, Plus Regulatory And Environmental Compliance • Selection Of Equipment For Delivery And Receipt To/From Pipelines, Barges And Ships, Trucks, And Rail, Including Metering Options, Loading Arms, Pumps, And Control Systems • Blending Options And Equipment, VRU/VCU, Water Treating, And Fire Protection • Key Factors Affecting Safety, Product Quality, System Reliability, And Profitability In Design, Construction, And Operations • Atmospheric Storage Tank Design, Layout, Construction, Corrosion Prevention, And Operations Covering API 650 And API 653 • Overview Of Pressure Vessel And Sphere Design And Construction • Design, Development, And Operation Of Underground Cavern Storage Facilities

COURSE TOPIC: Overview of Offshore Systems

COURSE CODE : 1897

COURSE DURATION: 5-10 DAYS

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 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.

WHO SHOULD ATTEND:

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.

COURSE OBJECTIVE

- 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

CONTENT SUMMARY

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

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COURSE TOPIC: Surface Production

Operations

COURSE CODE: 1954

COURSE DURATION: 5-10DAYS

COURSE INTRODUCTION:

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.

WHO SHOULD ATTEND:

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. This course is excellent for cross-training and delivers an understanding of all the fundamental field treating facilities.

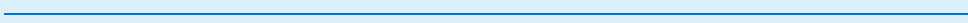
COURSE OBJECTIVE

- 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

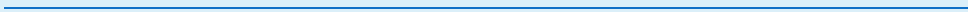
COURSE SUMMARY

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 • Watertreaters: SP Packs, Plate Interceptors, Gas Flootation, 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.

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COURSE TOPIC: Oil and Gas Processing Facilities for Operations and Maintenance

COURSE CODE:1909

COURSE DURATION: 5-10 DAYS (HANDS-ON PRACTICAL)

COURSE INTRODUCTION:

This course will provide the basic knowledge required for understanding processes and operating issues common to gas processing facilities. Course content is customizable to client needs.

WHO SHOULD ATTEND:

Facility operators who require a working knowledge of the various processes used in production fluid conditioning and processing, 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.

COURSE OBJECTIVE:

- About the effects of produced fluid (OGW) compositions on facility design and operation
- About various separation and conditioning processes for meeting specifications on oil, gas, and produced water streams
- Refrigeration 4-cycle process and application of economizers to the refrigeration process
- To understand how to operate facilities so as to minimize processing costs
- How to apply course material to troubleshooting gas conditioning and process anomalies

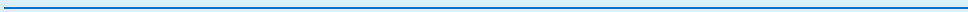
COURSE SUMMARY

Basic Chemistry And Physical Principles Related To Hydrocarbons • Quick Overview Of Gas Processing • Phase Behavior Fundamentals • Mass Transfer Operations • Amine Gas Sweetening • Water-Hydrocarbon Behavior, Including Hydrate Formation • TEG Gas Dehydration • Solid Bed Adsorbers • Mechanical Refrigeration • Gas Expansion NGL Recovery (Turbo Expanders And Joule-Thompson Effect) • NGL Stabilization And Fractionation Typical North Sea Oil And Gas Producing Operations, Produced Water Treating, Seawater Treating, And Other Offshore Topics Of General Interest • Brisbane -Gas Processing And Introduction To Liquefied Natural Gas (LNG) Processes • Midland - Gas Conditioning And Processing, Sour Gas Treating, And Sulfur Recovery • Pittsburgh

- Mechanical Refrigeration Principles And Equipment, NGL Fractionation, And Cryogenic
NGL Recovery

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COURSE TOPIC: Gas Production Engineering

COURSE CODE: 1663

COURSE DURATION : 3WEEKS

COURSE INTRODUCTION:

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.

WHO SHOULD ATTEND:

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

COURSE OBJECTIVE

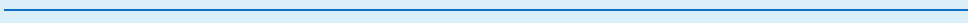
- Apply proven techniques to field problems which increase profitability
- Calculate gas well performance from the reservoir to the sales line
- Optimize gas well production
- Relate reservoir and well performance to time
- Predict when a well will die due to liquid loading

COURSE SUMMARY

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, Chokes, 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; Hydrateformation

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COURSE TOPIC : Applied Maintenance Management

COURSE CODE: 2901

COURSE DURATION: BASIC -5 DAYS

COURSE INTRODUCTION:

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. Better utilization of Computerized Maintenance Management Systems (CMMS) will also be covered in this course. A pre and post seminar self-assessment will be given to indicate delegates' competency improvements.

WHO SHOULD ATTEND:

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.

COURSE OBJECTIVE:

- 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 SUMMARY

World Class Standards • Maintenance Strategies • Planning And Scheduling • Optimizing Preventative And Predictive Maintenance • Identifying Critical Equipment • Utilizing Your CMMS Supplier Certification • Developing Organizational Competence • Presenting Your Action Plan

COURSE TOPIC: Maintenance Planning and Work Control

COURSE CODE 2776

COURSE DURATION: FOUNDATION 5-DAYS

COURSE INTRODUCTION:

No matter what the price of oil is, safe facilities operations require effective maintenance work control. 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.

WHO SHOULD ATTEND:

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

COURSE OBJECTIVE:

- 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 SUMMARY

Work Identification • Planning Prioritization • Scheduling Execution • History Records • Optimizing Preventive Maintenance • Predictive Maintenance Planning • Critical Equipment Focus • Emergency Response

COURSE TOPIC: *Economics of the Oil Supply Chain*

COURSE CODE:2665

COURSE DURATION:5-10 DAYS

COURSE INTRODUCTION:

During this five-day program, delegates explore the various activities of an oil company and the economic forces driving the oil supply chain. They will also learn the main areas of risk and opportunity from the crude oil supply terminal, through transportation, refining, and international trading to the refined product distribution terminal.

Through exercises carried out in teams in a fictional refinery, delegates learn the quality aspects of product supply, refinery process economics, and the effects of upgrading. They will examine blending as a means to meet quality requirements at optimal cost and construct a processing deal. Additionally, the program provides an overview of international markets, trading, and different methods of price risk management.

This program is an essential foundation for people entering the oil industry or for those with single-function experience looking to broaden their knowledge. It also forms the basic building block for the other Invincible courses. Numerous

exercises are carried out in teams, with comprehensive debriefs studying the consequences of the decisions reached.

WHO SHOULD ATTEND

This course will benefit those new to the oil industry or moving into the commercial area from the upstream or downstream sectors. The program is also of interest to those who interface with the commercial aspects of the oil industry such as banks, accountancy practices, and other organizations.

COURSE OUTLINE

- Oil price history
- World supply and demand
- Structure of world markets
- Price formation and reporting

CRUDE OIL

- Types of crude oil
- Evaluation of crude oils
- Crude oil markets
- Crude oil pricing

OIL REFINING

- Distillation and reforming
- Treating and conversion
- Cracking
- Refinery economics and optimization
- Blending
- Refinery margins

LOGISTICS

- Scheduling oil supplies
- Stocks and storage
- Losses
- Inland distribution

OIL PRODUCTS

- Refined product quality and specifications
- Value of quality
- Downstream marketing

TRANSPORTATION

- Oil tankers
- Freight and Worldscale
- Chartering a ship
- Pipelines

MARKETS AND TRADING

- International oil trading
- Mechanics of trading
- Contracts for sale and purchase
- Costs of trading

PROCESSING

- Processing deals

PRICE RISK MANAGEMENT

- Identifying exposure
- Futures
- Swaps
- Basic hedging techniques

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