



My Happy Training Course for Training and Development

Equip Your Employees with Today's Most In-demand Skills Your
Business Needs to Reach Today's Modern Customers!

OIL AND GAS TRAINING COURSES

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Cathodic Protection System in Oil and Gas Exploration Industry

Course Outline

*** *Significance of Corrosion Control***

Corrosion - Largest Single Cause of Plant Failure
Economic Effects
Environmental Effects
Safety Effects
Corrosion Management Preventive Strategies
Cost of Corrosion
Case Study: Catastrophic Corrosion Accidents

*** *Corrosion and Its Control***

Requirements for Corrosion to Occur
Metallurgical Factors
Forms of Corrosion
Corrosion Control Methods
Material Selection
Environmental Modification
Protective Coatings
Cathodic Protection

*** *Corrosive Environments and Construction of Materials***

Atmospheric Environments
Marine atmospheres
Industrial Atmospheres
Underground Environments
Concrete Structure Environment
Corrosion Properties of Carbon Steels
Corrosion Properties of Cast Iron
Corrosion Properties of Stainless Steels
Corrosion Resistance Properties of Aluminium
Corrosion Properties of Copper
Corrosion Properties of Nickel

*** *Section IV - Fundamentals of Cathodic Protection Systems***

Galvanic Series
General Application of Cathodic Protection
Economic Considerations
Industry Standard and Codes
Principle of CPS
The Cathodic Protection Cell
Methods of Applying Cathodic Protection
Sacrificial Cathodic Protection System

Impressed-Current Cathodic Protection System
Advantages of SCPS
Disadvantages SCPS
Advantages ICCP
Disadvantages ICCP
CPS Selection
Basic Requirements for Cathodic Protection
Principles Of Cathodic Protection
Cathodic Protection Criteria
Current Rectifiers/DC Power Source
Applicable NACE Standard for Cathodic Protection Systems

*** Cathodic Protection Systems and Coatings**

Role of Protective Coating in CPS
Selection Factors
Coating Defects
Coating Efficiency
Overvoltage
Cathodic Disbondment
Commonly used Coating in Conjunction with CPS

*** Cathodic Protection System Design**

Design Factors
Electrolyte resistivity survey
Electrolyte pH survey
Structure versus electrolyte potential survey
Current requirement
Coating resistance
Protective current required
Sacrificial anode (galvanic) cathodic protection design
Impressed current cathodic protection system design
Soil resistivity
Current requirement test
Typical CPS Design Parameters
pH TESTING PROCEDURES
Current Requirement Testing

*** Anodes and Rectifiers**

Anode Selection
Current output
Driving Potential
Anode life
Anode Shape and Dimension
Anode Material Cost
Anode Efficiency
Galvanic Anode Types
Current Requirements for ICCP System
Anode Materials for ICCP

Anode Backfilling
Installation of Sacrificial Anodes
Anode Vent Piping
Impressed Current Anode Beds
Quality Control and Quality Assurance
Impressed Current Rectifiers/DC Power Source

*** *Practicing and Construction of Cathodic Protection System***

Components of Cathodic Protection Systems
Essential Components
Isolating joints
Junction Boxes
Test stations, measuring points and coupons
Sleeve pipe
Thermite Weld
Earthing Systems
Line current measurement
Pipe Sleeves/Casings
Concrete Encased Pipe
Cathodic Protection Vessels and Tank Internals Vessels and Tank
Tanks for Storage of Chemicals
Water Circulating Systems
Heat exchangers (tube and shell)
Water box coatings
Submarine pipelines
Construction of Cathodic Protection Systems

*** *Instrumentation and Safety Aspects***

Alkalinity
Hydrogen Evolution
Chloride Evolution
Installation Adjacent to Telecommunication Services
Installation Adjacent to Railway Signal and Protection Circuits
Interaction at Discontinuities in Cathodically Protected Structures
Installation at Jetties and Ships
Danger of Electric Shock
Installations on Immersed Structures
Installations for the Internal Protection of Plant
Fault Conditions in Electricity Power Systems
Stray Current Corrosion
High Impedance Voltmeter
Reference Cells (Half Cells) Reference Cells

*** *Corrosion Management Systems***

Oilfield Cathodic Protection Systems
Corrosion Economy
Corrosion Key Performance Indicators (KPIs)
Asset Integrity and Corrosion Management

Commercial Contracts in Oil and Gas and Negotiation Skills

Course Content

Day 1: Introduction to Legal, Fiscal and Contractual Basics

** Crude Oil and Gas*

The Oil Industry Streams

Demand Drivers for Crude Oil

Drilling Contracts – Contract Alternatives

** Legal Fiscal and Contractual Framework Ownership*

Oil and Gas Rights and Ownership – The Ad Coelum Doctrine

The Rule of Capture

A rule of “No liability”

Limitations to Rule of Capture

Theories of Ownership – Escaped Hydrocarbons

Drainage by Enhanced-recovery Operations

Doctrine of Correlative Rights

Conservation Laws – Drilling Wells

Conservation Laws – Fair Share Doctrine

Function of Oil and Gas Conservation Laws

Well-Spacing Rules

Day 2: Introduction to Contracts

** Kinds of Oil and Gas Interests*

Fee Interest

Mineral Interest

Leasehold Interest

Surface Interest

Royalty Interest

Production Payment

Carried Interest

Other Interests

** Key Stages of Petroleum Projects in View of Contracts*

Explore to find it in the first place

Develop the infrastructure to remove oil and gas from ground;

Produce (and sell) the oil and gas you have found;

Abandon the wells and protect the environment when it runs out and clean up (“decommission”)

** What is a Petroleum Contract*

Need for Collaboration between parties

What is a Petroleum Contract?

Host Government Contract

Petroleum Fiscal Regime defined
Petroleum contracts under different regimes
Awarding or winning contracts
Types of Petroleum Contracts and their Key Attributes
Upstream Project Agreement
Host Government Take
An example of Concessionary System's Cash Flow
Optimal Government Take
PSC - Cash Flow Distribution
PSC - CF Distribution Example - Year N+1
Comparison of Fiscal Systems
Flexible Fiscal Regimes
Why Dynamic Terms are used in Contracts
Joint Ventures and Other Combinations

Day 3: Roles, Responsibilities and Fiscal Tools

**** Dissection of Petroleum Contracts***

The document follows the events of project

Order and Disorder in the Clauses

**** Parties Roles and Responsibilities in Petroleum Contracts***

The General Framework of parties involved

National Oil Company Multiple roles

International Oil Company Role

Grants of Rights to a party - Contractor and Host Government

Rights and Obligations of Host Government

Addressing important operational issues in the contract

Contract Area or Block

Time periods in contracts

Minimum Work Obligations in Exploration Phase

Relinquishment of Unused Area to Government

Discovery, Appraisal, Declaration of Commerciality and Development

Post Commercial Discovery - A Field development Plan

Annual Work Programs and Budgets - Petroleum Contracts

Joint Management - Petroleum Contracts

Deadlock - Petroleum Contracts

**** The Financial Considerations in Petroleum Contracts - Fiscal Tools***

Tools for Concessions, Production Sharing Contract and Participating Agreements

Signature Bonus

Production Bonus

Rental

Royalty - Fixed Royalty, Sliding Royalty, and Royalty Determination Point

Payment in Cash or In Kind

Corporate Income Tax and Ring Fencing

Profit Sharing

Production Sharing - Contract's and Government share

Fixed Profit Oil Shares

Sliding Scale Profit Sharing

Cost Oil

State Participation – A Fiscal Tool in PSC

Day 4: Strategies and Solutions

** Fiscal Strategies and Solutions*

Intro to Fiscal Strategies and Solutions in PSC

Strategies for State to meet their Profitability

The 4 Key Questions that Defines the Strategy

The Changing Profitability – Due to Prices, Costs, Production Rates

Understanding the Regressive, Neutral and Progressive Fiscal Tools

Approaches to Profitability

Profitability And the Fiscal Tools

Timing of Petroleum Revenues – Fiscal Tools

Risk for The State – Fiscal Tools

State Participation as a Co-Investor

Encouraging Investment and Re-Investment

The Shift to Unconventional Oil and Gas

** Gas and LNG Contracts*

The Distinct Characteristics

Liquefied Natural Gas Business

Liquefied Natural Gas – Contracts

Gas Sales and Transportation Contracts

Gas Transportation Tariffs

Gas Sales Agreements – Terms and Quantity

LNG Sales And Purchase Agreements

General Economics for Gas Exploration and Development

Day 5: Negotiations Skills

** Art and Science of Negotiations Skills*

What is negotiation?

Understanding relations between conflicts and negotiations

Identify key roles and responsibilities of negotiating team

Preparing for negotiations

Implement an effective negotiations process

Understanding key success bargaining factors

Concluding the negotiations

Corrosion Control Oil and Gas Exploration Industry

Course Outline

** Oil and Gas Production Fluid*

Origin and Production of Oil and Gas

Chemical Compositions of Production Fluids

Oilfield Equipment
Overview of Oilfield Processes and Operations

*** Metallurgy**

Chemical Properties of Metals
Mechanical Properties
Alloying Elements
Cooling of Metals
Crystalline Forms of Metals
Metal Defects
UNS Numbers
Properties of Common Oilfield Metals and Alloys
Metallurgy of Oilfield Equipment

*** Corrosion Damage**

Corrosion Fundamentals
Common Forms of Corrosion
Corrosion Monitoring in Plant and Facilities
Non-Destructive Testing (NDT)
Corrosion Failure and Root Cause analysis
Group Discussion- Applicable Standard Study for Corrosion Monitoring

*** Oilfield-Specific Corrosion**

Internal Corrosion
Water Corrosion
Sour Corrosion
Sweet Corrosion
Oxygen Corrosion
Top of Line Corrosion (TLC)
Microbiologically Induced Corrosion (MIC)
Sand Erosion
External Corrosion
Atmospheric (Marine) Corrosion
Corrosion Under Insulation (CUI)
Corrosion of Pipe Flanges
Underground Corrosion
Stray Current Corrosion
Seawater Corrosion
Oilfield Equipment Corrosion
Case Study-Plant Aging and Life Extension Program

*** Corrosion Prevention and Control Measures**

Corrosion Control by Operations
Corrosion Control by Processes
Corrosion Control Design
Corrosion Control by Material Selection
Group Discussion -NACE MR0175/ISO 15156-1 H2S Corrosion Resistant
Materials

*** *Cathodic Protection (CPS) Systems***

Cathodic Protection Fundamentals
Galvanic Anodes CPS
Impressed Current CPS
CPS System Maintenance

*** *Barrier Film (Coatings and Lining)***

Coating Fundamentals
Performance Characteristics of Industrial Coatings
Types of Coating Systems
Surface Preparations
Coating Applications
Coating Defects

*** *Chemical Treatment***

Corrosion inhibitors
Performance Evaluation of Corrosion Inhibitor
Application of Corrosion Inhibitors

*** *Biocide Treatment***

Microbiologically Influenced Corrosion (MIC)
Sulphate-Reducing Bacteria
Biocide Selection and Treatment

*** *Non-Metallic Materials***

Polymers
Composite Materials

*** *Corrosion Management Strategy (CMS)***

Corrosion Management of Oilfield Equipment
Corrosion Economy
Corrosion Key Performance Indicators (KPIs)
Asset Integrity and Corrosion Management
Codes and Standards
Corrosion Data Management
Case Study -Catastrophic Corrosion Failure

Delivering Successful Projects within the Oil and Gas Industry

Course Content

DAY 1 - Preparing for Project Delivery

Understanding Who the Key Stakeholders Are and How They May Impact Upon the Project

Implications of Unclear Needs and Expectations

Project Success Criteria and How the Project will be Measured as Successful

Defining the Project Requirements

Developing the Scope – Using product and work breakdown structures

Utilising Relevant Techniques for Project Estimating

DAY 2 - Project Planning - Schedule, Cost and Resources

Developing a Network Diagram

Developing the Precedence Network Diagram with Total and Free Float Calculations

Developing a Gantt Chart –The Schedule Baseline

Understanding How to Estimate Project Cost Baseline

Different Contract Types According to Risk Distribution

Difference between Fixed Price and Cost-Plus Contracts

Resource Allocation Algorithms for Resource Prioritisation

Planning and Scheduling Limited Resources

Options for Accelerating the Schedule and How to Deliver

DAY 3 - Managing Risks and Resources

Risk Management Process and Model

Identifying Potential Risk Events Typical in an Oil and Gas Project

Qualitative and Quantitative Analysis Techniques

Designing Appropriate Risk Response Planning Strategies

Challenges of An Oil and Gas Project Team

Different Leadership Models

Dynamics of Team Development and Motivation

DAY 4 - Managing Project Changes while Maintaining Quality

Managing Change in Projects

Understanding the Best Practice Change Processes Used in Projects

Tracking the Project – Using Earned Value Management (EVM)

Managing Variable Conditions - Managing the tensions

The Critical Chain and its Growing Popularity in the Oil and Gas Industry

The Benefits of Utilising a Project Support Office

Project Reviews

Project Quality Management

Difference between Quality Planning, Assurance and Control

Understanding How Quality Tools Can be Used

DAY 5 - Staying Focused, Delivering and Closing Your Project

Recognising the Operational Considerations that Need to be Met and Prepared For

Project Cost and Schedule Recovery Techniques Relevant to the Oil and Gas Industry

The Implications of Late Recovery Practices

Distillation - Column Operation, Control, and Troubleshooting

Course Content

Day 1: Fundamentals of Distillation

Introduction to distillation processes and their significance in the industry

Overview of distillation column types, configurations, and equipment
Key principles and concepts of vapor-liquid equilibrium and phase behavior

Distillation column terminology, terminology, and process variables

Distillation column internals and their impact on separation efficiency

Day 2: Column Operations and Optimization

Key parameters for effective column operations

Heat and mass transfer in distillation columns

Tray and packing designs and their selection criteria

Energy optimization and heat integration techniques

Feed and product specifications and their influence on column performance

Day 3: Distillation Control Strategies

Introduction to distillation control and its importance in process optimization

Feedback control strategies for level, pressure, and temperature

Cascade control and ratio control for distillation columns

Advanced control techniques, including Model Predictive Control (MPC) and neural networks

Case studies and examples of successful control strategies

Day 4: Troubleshooting and Problem Solving

Common operational issues in distillation columns and their causes

Techniques for diagnosing and troubleshooting column performance problems

Strategies for addressing flooding, weeping, entrainment, and other operational challenges

Maintenance and inspection practices for maintaining column performance

Hands-on exercises and simulations to enhance troubleshooting skills

Day 5: Optimization and Process Improvements

Overview of distillation column optimization techniques

Identification of bottlenecks and optimization opportunities

Strategies for improving energy efficiency and reducing operating costs
Enhancing product quality through column optimization
Future trends and innovations in distillation processes

Essential Skills for Oil and Gas Managers and Supervisors

Course Outline

*** *The Nature and Formation of Fossil Fuels and Oil Reserves***

The chemistry of petroleum
Characteristics of fossil fuels
Assay and properties
Measurement and characterization
Where we find fossil fuels
Industries and uses

*** *Generation, Migration, Accumulation and Exploration of Petroleum***

Identification of common rocks and minerals
Ocean environment and plate tectonics
Traps and trapping mechanisms
Geophysical and Geochemical surveys
Offshore drilling and production
Exploratory drilling and testing the well
Casing and cementing the well
Geologic classification types of reservoir and reservoir drive mechanisms
Development of oil and gas fields
Estimation of reserves
Surface treatment and storage
Enhanced oil recovery

*** *Distribution Transmission and Transportation***

Geopolitics and world energy markets
The geopolitics of oil pipelines
OPEC and the future role of a cartel
Overview of world petroleum consumption, supply, and prices
Sustainable energy: myths and realities
The global oil and gas industry
Petroleum; composition, classification and properties
Natural gas; composition, classification and properties

*** *Transportation***

Pipelines
Oil tankers
Case study - The Baku - Tbilisi - Ceyhan (BTC) pipeline

Storage

Tank farms

Tank farm operations

Commercial relationships between oil and gas production companies and downstream

marketer organizations

*** *Introduction to the Petroleum Industry***

The market for crude oil

The price of crude

The refining process

Product and specifications

Refinery complexity

Refining margins and profitability

Sales and marketing of petroleum products

Petrochemicals

*** *Petroleum Economics***

World petroleum consumption, supply, and prices, prospects for the future

Energy trading and commodities

Futures, options, and hedging

A brief history of real options

Introduction to energy finance and economics

Developing and Financing Oil and Gas projects

Oil and gas accounting

Discounted cash flow (DCF) and time-value considerations

Apply the present value and future value formulae (NPV)

Inflation, real, and nominal (time value of money)

Internal rate of return (IRR)

Hurdle rates and minimum acceptable rates of return

*** *Contracts, Joint Ventures and Fiscal Regimes***

Need for collaboration between NOC's and IOC's

Oil and Gas Contracts and Types of Contracts

Concession agreements

Production Sharing Agreement/Contract (PSA/PSC)

Technical Service Contract/Agreement (TSA)

Joint Venture and Service agreements

Similarities among fiscal systems

State participation

Signature bonus

Production bonus

Bidding for leases

*** *Financial and Energy Risk Management***

Introduction to energy risk management

Risk management and types of risk

Risks in trading energy commodities

Geopolitical risks and opportunities
Risk and opportunity analysis
The nonlinearity and complexity of uncertainty
Carbon capture and environmental issues
The future of the global oil and gas industry

*** *The Evolution of a Safety Culture***

Culture and Safety
Defining a Value System
A New Management Safety System
Leadership and Teamwork
Understanding why employees put themselves at risk
Assessing the organisational culture
Active Listening
Nonverbal Behaviours of Communication
Speaking Hints
Communication and Leadership
The Communication Process
Barriers to Communication
Presentation Skills

*** *Successful Negotiation***

Steps in negotiation
Negotiating fears
Making choices
Thinking creatively
Coping with criticism
Approaches to negotiation
Negotiating roles
Creative bargaining
BATNA is an acronym that denotes the Best Alternative to a Negotiated Agreement
Relational influence and power
Negotiating with integrity
Dealing with aggressors and Conflict
Negotiating globally
Course summary and roundup

Finance and Accounting for the Oil and Gas Industry

Course Content

Day One: The E&P Business and Project Economics

*** *The Business Environment***

Business objectives
Stakeholders
Corporate governance
* *The Exploration and Production (E&P) Business*
Risk and reward
Commercial arrangements
The field life cycle
* *Project Economics*
Project cash flows
The time value of money
Discounting and the cost of capital
Project economic models
Decision criteria

Day Two: Accounting, Exploration and Development Costs

* *The Accounting System*
Capturing and recording data
Cash and accruals
The balance sheet
The income statement and profit measurement
Accounting principles and standards
* *Capital and Operating Expenditure*
Matching costs and benefits
Assets and expenses
* *Exploration and Appraisal Costs*
Full cost and successful efforts
Intangible assets
* *Development costs*
Commitments
Tangible assets

Day Three: Reserves, Production and Cost of Sales

* *Reserves of Oil and Gas*
Classification of reserves
Reserve quantity disclosures
* *Production Costs*
Lifting costs
Maintenance costs
Royalties
* *Depreciation, Depletion and Amortisation (DD&A)*
Unit of Production (UOP) method
Changes in costs and reserves
* *Ceiling or Impairment Tests*
Test requirement and process
Accounting for test results
* *Decommissioning, Removal and Restoration*
Obligations to remove and restore
Reporting of decommissioning liabilities and costs

Day Four: Risk and Cost Sharing Arrangements

* *Joint Ventures*

Cash calls

Billing statements

Entitlements and liftings

* *Transfers of interests or risks*

Farm outs

Carried interests

* *Production sharing contracts*

Cash flow implications

Reserve implications

* *Long-term gas contracts*

Pricing mechanisms

Take or pay

Day Five: Financial Analysis, Budgets and Management Reports

* *Analysis of Financial statements*

Profitability, liquidity and solvency

Investment measures

* *Budgets*

Authorisation of expenditure

The budget process

* *Management reports*

Responsibility reporting

Analysis of variances

Financial Accounting, Reporting and Business Support in the Oil and Gas Industry

Course Content

Day One: Oil and Gas Industry Overview

Current challenges in gaining access to reserves

The nature of the business and the role of the finance professional

Case study review

Oil and Gas financial accounting and reporting principles

Various financial reporting frameworks

Specific accounting terminology

Full cost V successful efforts

Day Two: Oil and Gas Accounting Methods and Techniques

Specific financial accounting topics

Non drilling exploration costs
Acquisition costs
Drilling and development costs
Expensing of depreciable assets
Accounting for production activities
Asset retirement obligations and asset impairment
Accounting for revenue

Day Three: Partnerships and Understanding Financial Information

Joint ventures and product sharing agreements
Financial performance, position and cash flow statements
Ratio analysis and interpretation
Analysing and interpreting 'energy specific' ratios

Day Four: Improving Corporate Governance

Project lifecycle and project planning
Importance and application of risk management
Developing and managing the risk register
Developing and challenging a cost estimate
Developing and managing contingencies
Probabilistic methodology using Montecarlo simulation

Day Five: Capital Contracting and Project Performance and Reporting

Identify the business needs
Understand the market and risks
Developing the contracting strategies and tactics
Contract management
Financial and management reporting for effective decision making
Developing, measuring and reporting KPIs
Earned value management for Oil and Gas

Financial Modelling and Petroleum Project Economics

Course Outline

**** An introduction to the Excel Environment, with Petroleum-based examples***

Background to the Petroleum industry
Cell referencing, using formula's, formatting
Advanced charting within Excel
Data manipulation and management

**** Financial Analysis in the up and down stream Oil and Gas industry***

Introduction to financial statements
Ratio analysis applied to the Oil and Gas Industry

Trend analysis using Excel

Projecting financial statements using forecasting techniques available within Excel

*** *Statistical analysis (applied to the Oil and Gas industry) using Excel***

Analysis of equity returns of oil and gas industry companies

Use of Excel functions for statistical analysis

Use of scatter diagrams and regression techniques to calculate cost of equity financing

*** *Capital Structure in the Oil and Gas industry***

Analysis of capital structure throughout the up-stream and down-stream oil and gas industry

Examination of bond issues and IPO's by oil and gas industry participants

Examination and calculation of the cost of debt financing

*** *Investment Appraisal using Excel***

Investment appraisal using NPV, IRR and payback as applied to the oil and gas industry

Use of Excel functions for investment appraisal: IRR, PV and NPV

Use of solver in scenario analysis and stress testing

Using Excel to model decision trees

Using Excel to calculate the value of a real option and the abandonment decision

*** *An introduction to energy derivatives***

An introduction to the derivatives market

Examination of petroleum-based derivatives, including futures and options

Modelling up-stream and down-stream energy products using Excel

*** *Hedging risk using energy derivatives***

Hedging against price decreases and increases using petroleum futures

Using VBA to create functions to value energy derivatives

Hedging against price changes using petroleum-based options

*** *Oil product spreads***

Examining the relationship between energy products

Using futures spreads to speculate and to hedge against profit margin risk

Gas and Liquid Chromatography and Troubleshooting

Course Outline

*** *Introduction to Chromatography***

The History of Chromatography – Gas Chromatography (GC) and Liquid Chromatography (LC)

Overview of GC and LC Chromatography

The Modern Chromatograph

Liquid Chromatography – The Development Process

Factors Controlling Retention

Molecular Forces and Chromatographic Selectivity

Effects of Stationary Phase Loading on the Performance of a Chromatographic System

Chromatography Nomenclature

*** *Chromatography Basics***

Basic Chromatography

Sample Introduction

The role of sample introduction and injection ports in GC operations

Injection ports maintenance and its impact on GC performance

Columns

The role of columns in GC operations.

Column selection and maintenance

How columns can impact GC performance

*** *GC Operation***

Peak Dispersion in a Chromatographic Column

Detector Selection

The role of Detectors in GC operations

Detector maintenance

How detectors can impact GC performance

Setup and GC. Operation, Basic steps

Preparation for operation.

Sampling Techniques

*** *Data Acquisition and Calibration***

Calibration

Data Acquisition and Processing System

Calibration linked to GC performance

*** *Applications and Troubleshooting***

Chromatography Applications

Method Development

Gas Chromatography

Liquid Chromatography

ISO17025 Accreditation Basics

Laboratory Management and Troubleshooting

Hydrocracking and Hydrotreating Process Technology

Course Outline

*** Introduction**

Review of refining trends
Product specifications and environmental concerns
Overview of hydrotreating processes, yields and configurations

*** Chemistry And Principles of Hydro processing**

Hydrotreating reactions and process principles
Chemistry and kinetics of sulfur removal
Chemistry of nitrogen and oxygen removal
Hydrotreating catalysts
Olefin and aromatics saturation
Coke formation and catalyst deactivation
Mild hydrocracking
Resid chemistry

*** Naphtha Pre-treating**

Process variables and feedstock effects
Commercial flow schemes
Effects on reformer operation

*** Feed And Operating Variable Effects**

Feed properties
Operating variable effects
HDS as FCC pretreatment
Hydrotreating requirements and process economics

*** Diesel And Jet Fuel Production**

Trends in demand/quality
Effect of feed/process on yields/quality
Cut point effects
Cetane improvers, cloud/pour point improvers
Commercial considerations in hydro processing
Catalyst pre-sulfiding
Catalyst deactivation and regeneration
Process design/mechanical design features

*** Commercial Hydrocracking**

Hydrocracking feedstocks
Pretreatment considerations
Review of hydrocracking reactions/heats of reaction
Hydrocracking process configurations

Reactor design
Process variables and catalysts
Catalyst deactivation and regeneration
Hydrocracking yields and product properties

*** *Hydro processing Mechanical Considerations and Troubleshooting***

Design principles
Common problem areas
Safety issues

*** *Hydrogen Production***

Steam reforming for hydrogen production
Hydrogen purification options

International Oil and Gas Business Management

Course Outline

*** *Sources, Origin and Nature of Petroleum***

Fundamentals of organic chemistry
Definition of Petroleum
The Oil and Gas Industry
Basic petroleum geology
Origins of Hydrocarbon Deposits
Exploration activities
Exploration Methods
Drilling Proposal
Types of Well
Oil and gas field development
Production
Well fluids and surface production operations
Transportation

*** *Oil Companies, Corporate Relationships and Structures***

Operating companies and service companies
Local, national and multi-national oil and gas companies
Major International Oil Companies
National Oil and Gas Companies
Integrated and non-integrated companies
Integrated Companies
Non-integrated Companies
Organization of Petroleum Exporting Companies (OPEC)
Other international and multi-national organizations
International Energy Agency (IEA)

Production sharing agreements

*** *Processing Operations and Economics***

Oil refining operations

Distillation

Product improvement processes

Product conversion processes

Other operations

Gas processing operations

Inlet separation

Sulfur removal and sulfur recovery

Dehydration

Dewpoint control and byproduct recovery

Gas compression

Basic economics of the oil and gas industries

*** *Evaluation of Oil and Gas Opportunities***

Estimating the cost of oil and gas facilities

Using historical costs

Cost curves

Adjusting for different sizes

Adjusting for different time periods

Building cash flow models

What is financial modelling?

Who does Financial Modelling?

What are the steps in building a financial model?

Using cash flow models to evaluate projects

Internal rate of return

Net present value

Benchmark indicators

*** *Making Decisions under Conditions of Certainty and Uncertainty***

Certainty

Risk

Crisis problem

Uncertainty

The role of probability in decisions

Mathematical modelling of business processes

Making management decisions under conditions of certainty

Optimization of the model and interpretation of results

Making management decisions under conditions of uncertainty

International Petroleum Management

Course Outline

*** Sources, Origin and Nature of Petroleum**

Industry overview
Chemistry of fossil fuels
Origins of hydrocarbon deposits
Basic petroleum geology
Exploration methods and activities

*** Well Evaluations and Drilling Operations and Reservoir Management**

Types of wells
Well Evaluations
Drilling Operations
Well Completions
Oil and Gas Reserve Estimates
Volumetric Calculations - Original Oil and Gas In-Place
Reservoir Depletion Mechanisms
Declining Curve Analyses
Case Study: Oil Reserves estimation

*** Conventional and Unconventional Production**

Unconventional oil and gas
Shale Oil and Gas, Tight Gas, and Heavy Oil Recovery
Oil recovery methods
Primary, Secondary and Tertiary
Enhanced Oil Recovery Techniques
Reservoir Management - maximize ultimate recovery of oil

*** New Oil and Gas Field Development and Economic Evaluation**

Typical Decision Yardsticks
Petroleum Economics Analysis:
Net Present Value
Internal Rate of Return
Profitability Index
Unit Tech Cost
Economic Limit
Case study: Oil and gas field development economic evaluation

*** Oil and Gas Contracts and Joint Ventures**

Need for collaboration between parties - NOC's and IOC's
Alignment of interests
Oil and Gas Contracts
Types of Contracts
Concession agreements
Production Sharing Agreement/Contract (PSA/PSC)
Technical Service Contract/Agreement (TSA)
Joint Venture and Service agreements

*** Petroleum Fiscal Regimes**

Comparison of fiscal regimes

Auction theory and methods
Similarities among fiscal systems
Accounting aspects of fiscal systems
Division of revenues and profits
Concession
Concession rentals
Unitisation agreements
Royalties
Profit tax
Corporate tax
Ring fencing
State participation
Signature bonus
Production bonus
Bidding for leases

*** *The Chemistry of Petroleum and the Refining Processes***

Crude and Product Quality
Crude oil refining operations
Crude Oil Fractions
Crude Oil Refinery Products and Processes
Refinery configurations - separation, conversion and treatment
Refining Complexity
Pipelines
Storage
Treatment and Blending
Utilities

*** *Refining Economics - Environmental Aspects***

Refinery economics
Benefits of Integrating with Petrochemicals
Global oil reserves, production and trade movements
Crude Oil and Refining gross product worth (GPW)
Freight
Netback and Refining Margin
Vessel chartering
Environmental aspects
Case Study: Netback pricing calculation

*** *Oil and Gas Exports and Imports Business***

Organization of Petroleum Exporting Companies (OPEC)
Other international and multi-national organizations
International Energy Agency (IEA)
Oil Markets - Crude pricing regimes
Transportation Logistics - Pipelines, Terminals and Storage
Crude Oil Tankers
World's Major Pipelines
World's Major Terminals, Refineries

Transportation Logistics - Losses
Bottle necks and Chokepoints

*** Pricing, Trading, Markets, Risk Management**

Crude oil Benchmarks
Crude price assessment
Oil Trading
Total Barrel Economics
Oil Markets - Futures
Exposure - Price
Hedging - risk management
Pricing Management Considerations
Derivatives
Course Summary

Knowledge Management for the Oil and Gas Industry

Course Content

Day One: The Context and Business Need for Quality People

Introduction and program objectives
The financial case for knowledge management - people focused
Strategy needed and a focus on the long term
Case study - group work and feedback video
Is money the only motivator for high performing people?
Good people are at different levels in the organisation - discussion and case study

Day Two: Processes that Need to be Improved

Significant improvements in recruitment
Techniques to attract high performers - group work
Knowledge management in action
How to upgrade Performance appraisal
Are your processes supportive of your strategy?

Day Three: Differentiation - What it can do for your Organisation?

The principle of differentiation - its benefits to the organisation
Different performance levels in the organisation - the cost of poor performers
Why do high performers leave -we know the answer
The model of differentiation - how the organisation can significantly save money and be more efficient - group exercise
Motivation - what works now?
Methods of finding key motivators - from questionnaires to briefings

Day Four: Planning for the Future - How to Identify Potential?

Appraisal is not a good tool for finding potential -discussion
Use of profiling - demonstration and discussion
The new role of testing - new tools and new results - examples
The need for assessment centres - demonstration
Who is the best person to identify potential?
Strategy needed for fast tracking

Day Five: Succession Planning and Talent Rotation

New advances in succession planning
Who needs a succession plan - case study
Approaches you can adopt for your planning
The role of Head Hunters
Using our data -how to calculate how many people you need to be at maximum efficiency in any department -group exercise
Program review

Leadership and Strategic Thinking in the Oil and Gas Industry

Course Content

Day One: Leadership in the Oil and Gas context

What do we mean by leadership in the Oil and Gas industry
The differences between leadership and management
Turning leadership theory into practical leadership
Leadership styles
Case study review

Day Two: The Oil and Gas industry - challenges and opportunities

The nature of the Oil and Gas industry
Who are the key players?
Strategic challenges and opportunities facing the industry
Structures and business models
Case study review

Day Three: Strategic thinking in the Oil and Gas industry context

Importance of strategy
Differences between Oil and Gas strategy and operations
Critical thinking and problem-solving frameworks
Developing a strategic plan
Monitoring strategic performance
Case study review

Day Four: Contributing to an analysis of strategic risk

What is strategic risk?

Why is it important?

Understanding the risk management process

Application of the risk management process at the strategic level

How to improve your strategic risk management regime

Day Five: Oil and Gas Leadership and strategic thinking workshop

Strategic leadership for team development

Innovative Leadership skills

Case study application

Key learnings and course summary

Managing Project Risks in the Oil and Gas Industry

Course Outline

**** Fundamental Project Risk Management Concepts***

What is risk?

What is different about project risk in the Oil and Gas Industry?

The dual nature of risk: threats and opportunities

Business, operational and project risk

Introducing the risk management process

Planning risk management

**** Roles and Responsibilities and Identifying Risks***

Key risk management roles and responsibilities

Good practices adopted in oil and gas organisations

Alternative approaches – which is right for your organisation?

Risk identification

Oil and Gas Industry specific techniques

Overview of MAR, LOPA, HAZID HAZOP

The 'Bow Tie' methodology

Tools and techniques for project risk identification

Alternative techniques based on team dynamic

Sabotage teams

Categorisation and the use of Risk Breakdown Structure (RBS)

**** Risk Analysis Techniques***

Alternative Risk Analysis assessment formats and recommended practices in the oil and gas industry

Qualitative

Semi-Quantitative

Quantitative

Assessing Impact

Organisational / Business impact versus Safety / Environmental impact

Tools and techniques for risk analysis

Sensitivity Analysis

Expected monetary value analysis

Further factors to consider - the people side of risk

Perception, past experience and mental outlook

External factors - regulator activities and the effect of catastrophic incidents in the industry

Modelling and Monte Carlo simulation

Risk Analysis outputs

*** *Planning Risk Responses and Implementing Risk Responses***

Risk prioritisation

Risk response strategies

Action plan formulation

Action plan evaluation

Analytical evaluation process

Appropriate approval / endorsement of action plans

Implementing and monitoring

Variance and trend analysis

Earned value management

Implementing response plans - good practices

*** *Reporting and Communicating Risk, Extracting Lessons and Lessons Learned from the Industry***

Risk reporting

Escalating risks

Reserve analysis

Embedding the process

How to identify and feedback lessons learned

Key risk management lessons from the oil and gas industry and megaprojects in particular

Applying the lessons and how to implement in my organization

Masterclass - Advanced Oil and Gas Project Economics, Risk and Decision Analysis

Course Content

DAY 1 - Development Economics

A brief history of energy usage

Principles of development economics

Understanding of economic terms
Inflation and its impact on nominal and real cashflows
Project financing

DAY 2 - Uncertainty in Investments

Handling uncertainty in capital projects
Understanding probability concepts
The expected value concept: features and pitfalls
Expected Monetary Value (EMV)
Expected Profitability Index (EPI)
Expected Opportunity Loss (EOL)

DAY 3 - Risks and Uncertainties

Risk and uncertainty
Risk aversion and risk premium
Exploration project threats and opportunities
Economic decision criteria
Decision tree analysis
Probability distribution
Monte Carlo simulation

DAY 4 - Setting-up Spreadsheet Calculations Using Excel

Spreadsheet Calculations
Cashflow analysis
Sensitivity analysis calculations
Tornado diagrams
Introduction to Monte Carlo simulations using @Risk
Setting-up an oil field project

DAY 5 - Practical Use of the @Risk add-on: Oil Field Development Model

Developing an integrated economic model of an oil field development
Developing and using an @Risk Model Analysis
Project sensitivity analysis utilizing data from @Risk Model
Training course final review and close

Masterclass - Advanced Strategies in Oil and Gas Finance and Accounting

Course Content

Day One: Strategic Issues Facing the Oil and Gas Sector

The Nature of the Oil and Gas sector
Current and Future challenges within the sector – a question of Supply and Demand
Resources and Reserves

Financial Issues

Volatility: Demand, Energy prices, Exchange Rates, Interest Rates

Day Two: Advanced Strategic Decisions

Strategic Planning

Analytical Tools to Aid Strategic Planning

Balancing Upstream, Midstream and Downstream

Growth Strategies: Exploration, Diversification, Vertical and Horizontal Integration

Mergers and Acquisitions, Joint Ventures, Production Sharing Agreements and Strategic Alliances

Day Three: Financing Strategies in the Oil and Gas Sector

Sources of Finance – the Optimum Capital Structure and the Cost of Capital

Capital Investment Appraisal: NPV, IRR, Modified IRR, Payback

Financial Forecasting and Analysis in Excel

Managing Uncertainty of Production, Prices, Capital Costs and Construction Delays

Modelling Energy Prices in Capital Budgeting

Day Four: Financial Risk Management Strategies

Developing and Implementing a Risk Management Strategy

Risk Analysis of Oil and Gas projects using Excel

Sensitivity Analysis, Sensitivity Charts and Scenario Analysis, Monte Carlo Simulation

Hedging Energy Prices; Interest Rates and Foreign Exchange Rates using Financial Derivatives

Accounting for Hedging Under IFRS

Day Five: Financial Analysis of Oil and Gas Companies

Analysing the Performance of International Oil and Gas Companies

Analysing and Interpreting ‘Energy Specific’ Ratios

International Financial Reporting Standards (IFRS) relevant for Oil and Gas Companies

Determining the proper classification of oil and gas costs: Capitalise, Expense, Exploration costs, Development costs, Production costs

Analysing the impact of different accounting methods on financial statements

Masterclass - Auditing in the Oil and Gas Industry

Course Content

Day One: Understanding Oil and Gas Companies

Oil and Gas Companies – understanding the industry and the risks
Oil and gas value chain and significant accounting issues
Upstream, midstream and downstream activities
Laws and Regulations
Emerging Risk Areas

Day Two: Revenue, Joint Ventures and Reserves

Revenue recognition – contracts
Auditing shutdown management
Auditing Joint Ventures
Auditing outsourced operations
Due diligence programs on third parties
Reserves reporting issues

Day Three: Fraud, Impairment and Provisions

Fraud, fraud prevention and detection
Procurement issues
An effective internal audit function in oil and gas companies
Operational audits
Decommissioning and environmental provisions
Non-current assets and impairment

Day Four: Reserves, Financial Instruments and Other Issues

Auditing oil and gas reserves
Relying on the work of experts
Financial Instruments
Other auditing issues

Day Five: Corporate Governance, Internal Controls and Audit Reports

Governance issues
Sarbanes Oxley
External and Internal Audit Reports
Corporate Boards – perspective on risk and compliance issues

Masterclass - International Oil and Gas Leadership

Course Outline

Introduction to oil and natural gas
Exploration, production and transportation
Refining, processing, environmental safety and marketing of oil and gas
Industrial usage of oil and gas
International energy institutions and energy policies

Scenario planning and decision-making
Energy markets
Final paper project assignment and development
Oil and Gas projects and supply chain management
Project financing and upstream project valuation
Financial management
Strategy of international gas projects
Economic development in resource-rich countries
Oil and Gas governance
Negotiation
Risk and crisis management
Dispute resolution
Contracts in the energy industry
Oil and Gas regulatory environment
Advanced leadership and effective communication

Mastering Finance for Non-Financial Oil and Gas Personnel

Course Content

Day One: Finance and Accounting

The different meanings of 'Finance'
Why Finance is important for your business
Raising finance - you need a Business Plan
Sources and types of finance
The financial accounting system
Recording oil and gas transactions

Day Two: The Key Elements of Oil and Gas Reporting

The major differences between US GAAP and IFRS reporting
The treatment of exploration and evaluation costs - 'successful efforts'
or 'full cost'
Recognition and valuation of oil and gas assets - tangible and intangible
Revenue recognition - upstream, midstream and downstream
Financial analysis techniques - common sizing and ratio analysis
Analysis and interpretation of Oil and Gas company reports

Day Three: Accounting as an Information System

Management Accounting as an effective tool for communication
Costing oil and gas operations and processes
Cost-Volume-Profit and break-even analysis
Oil and gas budgeting - objectives, methodologies and processes
How to prepare budgets for oil and gas operations
Analysing variances between budget and actual results

Day Four: Cost of Capital and Investment Appraisal

Why you need to know your Cost of Capital

The cost of equity, cost of debt, and weighted average cost of capital (WACC)

Identifying new investment opportunities for your oil and gas business

Basic investment appraisal techniques – ARR and Payback

Discounted investment appraisal techniques, NPV and IRR

Capital rationing decisions using the profitability index and Excel solver

Day Five: Financial Risk Management

The main types of risk and principles for risk management

New investment risk in oil and gas operations

Financing risk

Interest rate risk

Foreign currency risk

The corporate governance requirements for effective risk management

Oil and Gas Accounting and Performance Measurement

Course Content

Day One: THE OIL and GAS SECTOR AND MAJOR ACCOUNTING ISSUES

** The Oil and Gas Sector and The Macro-economic Factors*

Commodity prices, currency fluctuations, interest rate risk and political developments and environmental risk.

** Costs in Acquisition, Exploration, Development and Production of new oil or natural gas reserves*

** Accounting Approaches*

The "Successful Efforts" (SE) Method or the "Full Cost" (FC) Method

** An Introduction/Overview of IFRS in relation to the Oil and Gas Sector, with particular reference to:*

IFRS 1: First-time Adoption of International Financial Reporting Standards

IFRS 6: Exploration for and Evaluation of Mineral Assets

IFRS 10: Consolidated Financial Statements

IFRS 11: Joint Arrangements

IAS 16: Property, Plant and Equipment

IAS 36: Impairment of Assets

IAS 37: Provisions, Contingent Liabilities and Contingent Assets

IAS 38: Intangible Assets

IAS 39 Financial Instruments: Recognition and Measurement – Superseded by IFRS 9 effective 2013

Day Two: EVALUATING THE PERFORMANCE AND IDENTIFYING THE ACCOUNTING ISSUES OF BP, CHEVRON, SHELL and SABIC

* *Analysis of financial statements*

Income Statements

Statement of Financial Position (Balance Sheet)

Cashflow Statements

* *Identification and Evaluation of their Accounting Policies*

* *DuPont Analysis - Evaluating and Improving Return on Equity (ROE)*

* *Evaluation of their Share Price and Investment Performance*

With live feeds from London Stock Exchange and Dow Jones

Day Three: ACCOUNTING FOR UPSTREAM ACTIVITIES WITH REFERENCE TO IFRS AND EXAMPLES OF BP, CHEVRON and SHELL, E.G.

Reserves and resources

Exploration and evaluation

Revenue recognition

Assets

Depletion, Depreciation and Amortisation (“DD&A”)

Impairment of development, production and downstream assets

Day Four: JOINT ARRANGEMENTS; FINANCIAL INSTRUMENTS and DERIVATIVES

Business Combinations, Joint Ventures and Production Sharing Agreements (“PSA”s)

Treasury Management Issues for Multi-nationals

The Use of Derivatives in the Oil and Gas Sector to manage the commodity, currency and interest-rate risks etc

Day Five: CREATIVE ACCOUNTING AND CORPORATE GOVERNANCE

Creative Accounting – Enron and investor protection

Auditors and reporting to investors in the oil and gas industry

External audit investigations and reports

The auditor’s ‘Opinion’

True and Fair

Sarbanes Oxley

Internal audits

Ethical issues

Corporate governance

Government regulation

Investor confidence and share prices

Oil and Gas Contracts

Course Content

Day 1 - Principal Types of Oil and Gas Contracts

Principles of Petroleum Law and Industry
Exclusivity, Mutual Interest and Confidentiality
Concessions/Licences
Hire, Lease and Rentals
Services and Works Agreements
Multi-party Contracts

Day 2 - Managing the Supply Process

Overview of Procurement Best Practice
Developing the Scope of Work
Qualifying Suppliers
Managing the Supply Chain
Contract Award and Execution
Bribery and Corruption

Day 3 - Key Contractual Issues and Their Management

Performance and Penalties
Liabilities and Indemnities
Force Majeure
Pricing and Payment
Termination
Local Content Requirements

Day 4 - Managing Contractor Performance

Identifying and Managing Supplier Risk
Service Level Agreement
Key Performance Indicators
Changing the Scope of Work
Limiting and Excluding Liability
Use of Bonds, Guarantees and Warranties

Day 5 - Dispute Management in the Petroleum Industry

Damages and Other Remedies
Litigation or Arbitration?
Alternative Third-Party Dispute Resolution
Enforcement Measures
Negotiation, Compromise, Settlement
Open Forum – Questions and Final Review

Oil and Gas Marine Terminals: Operations, Management and Safety in Accordance with International Standards

Course Outline

*** *Cargo Properties***

Seminar Overview and Introductions

Dangerous Cargos

Toxicity

Confined spaces

Breathable atmospheres

Hydrocarbon properties

Crude oil

Liquified Petroleum Gas

Liquified Natural Gas

Fires and Explosions

UEL and LEL

BLEVE

Pancake cloud explosions

Storage Tanks

Atmospheric aboveground storage tanks

Floating roof, fixed roof, variable vapour space and pressurized tanks

Tank inspections and cleaning

Transfer Systems

Centrifugal pumps design and operation

Piping systems

Flow and pressure matching

Ship-shore Transfers

Marine Loading Arms

Lightering

The Ship/Shore Safety Checklist

*** *Harbour and Vessels***

Jetties, quays, wharves and SBMs

Harbour design and construction

Sizing and tidal effects

Depth constraints and dredging operations

SBM design and construction

Hoses

Cargo compatibility

Marking and testing

Storage and maintenance

Shipboard management

Disposal of tanks washings, slops and dirty ballast

Bunkering

Communications and emergency response plans

*** *Safety and Risk***

Ignition sources

Electrostatic charge

Hazardous zone classification

Intrinsically safe equipment

Firefighting and protection
Fire detection systems
Firefighting systems
Shipboard firefighting systems
Risk assessments
Risk management
Qualitative and quantitative risk assessment techniques

*** *Terminal Management***

Storage and transfer planning
Berthing support
Cargo transfer support
Emergency response
Vessel departure support
Security and vessel access
International regulations and requirements for oil and gas marine terminals

Oil and Gas Tariff Appreciation and Equipment Identification for Effective Billing and Increased Revenue

Course Outline

*** *Fundamentals of Oil and Gas Tariffs***

Introduction to Tariffs and Revenue Management
Emphasizing the Importance of Accurate Billing in Port Operations
Exploring Different Types of Tariffs in the Oil and Gas Industry
Breaking Down and Explaining Components of Tariffs
Analyzing Real-world Tariff Structures through Case Studies

*** *International Tariff Standards and Best Practices***

Understanding Global Standards in Tariff Determination and Billing
Ensuring Compliance with International Tariff Guidelines
Learning from Global Tariff Practices: Case Studies

*** *Effective Equipment Classification and Identification***

Overview of Oil Well Equipment and Components
Categorizing Oil Well Equipment: Drilling, Production, and Transport Phases
Identifying and Describing Key Equipment Components
Connecting Equipment to Appropriate Tariff Structures
Hands-on Practice: Classifying and Identifying Oil Well Equipment

*** *Application of Tariffs and Revenue Optimization***

Different Approaches to Tariff Calculation: Equipment-based, Usage-based, etc.

Addressing Special Cases: Oversized Equipment, Emergency Situations, etc.

Strategies for Transparent and Compliant Billing

Enhancing Stakeholder Communication on Equipment Identification and Billing

Identifying Opportunities for Revenue Optimization

*** *Case Studies and Practical Implementation***

Applying Tariffs to Various Oil Well Equipment: Real-world Case Studies

Group Exercises: Calculating Tariffs for Different Equipment Types

Open Discussion and Q&A: Addressing Challenges and Finding Solutions

Oil and Gas Terminal Operations and Equipment Management

Course Outline

*** *Fundamentals of Oil and Gas Terminal Operations***

Introduction to Oil and Gas Terminal Operations

Importance of Efficient Terminal Management for Revenue Generation

Key Components and Layout of an Onshore Terminal

Overview of Terminal Equipment and Infrastructure

*** *Marine Gas Oil Tank Management***

Introduction to Marine Gas Oil Tanks

Storage and Handling Procedures for Marine Gas Oil

Safety Considerations in Marine Gas Oil Tank Management

Case Studies: Real-world Challenges and Solutions

*** *Yard Management and Equipment Handling***

Yard Management Principles and Best Practices

Effective Equipment Stacking and Organization

Loading and Unloading Procedures for Various Equipment

Yard Safety Protocols and Emergency Response

*** *Identification of IMDG Substances***

Understanding IMDG Codes and Regulations

Identifying Dangerous Goods and Hazardous Substances

Handling and Storage of IMDG Substances in a Terminal

Compliance with International Standards for Dangerous Goods Handling

*** *Classification of Oil and Gas Equipment***

Overview of Oil and Gas Equipment Categories

Operation, Diagnostics and Maintenance of Equipment for Oil and Gas Production

Course Outline

*** Rotating Equipment**

Pumps and Compressors
Positive displacement
Centrifugal action
Pump and Compressor Performance
Pump curves
Compressor maps
System curves
Selection and Specification
Fulfilling process requirements
System integration

*** Static Plant**

Piping, Pipelines and Pressure Vessels
ASME B31 codes for piping
ASME BPVC VIII for pressure vessels
Pressure relieving devices
Above Ground Storage Tanks
API 650 for ASTs
AST construction
General Construction Considerations
Fabrication techniques
Resource logistics
Working with contractor

*** Materials and Construction**

Material Properties
Physical properties
Testing
Material specification data
Welding
Techniques
Qualification and procedures
Approval and quality
Inspection and Testing
NDE techniques: VT, PT, ET, MP, RT, UT

NDT techniques: hydrotest and pneumatic test

*** System Design**

Process Flow Schemes and Process Engineering Flow Schemes

Overview

DEP requirements

Process design and instrumentation

Commissioning

Preparatory checks

Protocol development

Startup/Shutdown/Handover

Plant and Equipment Operability

Operations consideration

Maintenance considerations

Specifications

Procurement Requirements

Material and Performance specifications

Supporting Standards: regulatory and in-house

Project schedule

Measure the Success

KPIs for the mechanical engineer

Benchmarking

Petroleum Project Economics and Risk Analysis

Course Outline

*** Cash Flow Analysis**

Familiarization with Economic terms

Setting up Cash Flow Calculation

Depreciation Methods

Loss Carry Forwards

Inflation

Nominal and Real Cash Flow

Sunk Costs

Project Financing

*** Economic Indicators**

Economic Indicators Definitions

Present Value Concept

Discount Factor

Net Present Value

Internal Rate of Return

Effect of Project Delay

Payback Period
Profit/Investment Ratio
Incremental Projects

*** *Risks and Uncertainties***

Risk and Uncertainty
Expected Value Concept
Decision Tree Analysis
Farm-out Decision
Probability Analysis
Sensitivity Analysis
Probability Distribution
Monte Carlo Simulation

*** *Setting up Spreadsheet Calculation***

Introduction to Spreadsheet Calculation
Simple Cash Flow Using Excel
NPV calculations
Application of economic indicators

*** *Setting up Oil Field Development Model***

Group activities
Setting up an Integrated Economic Model of a Typical Oil Field
Development
Project Sensitivity Analysis for the selected model
Introduction to Russell field model
Final remarks

Petroleum Refining-Production Planning, Scheduling and Yield Optimization

Course Outline

*** *Application of Planning and Scheduling***

Overview of planning and scheduling in oil refineries
Refinery Configuration:
Hydro skimming Refinery
Refineries with Secondary Conversion Process
Integrated Refineries
Existing and New Refineries
Choice of Crude
Crude oil scheduling
Choice of Processes
Capacity utilization of Crudes
Severity of Process Operations

Cut-points Optimization
Facing Upset Situations
Tankage Requirement

*** *Improving Product Movements and Releasing Tankages***

Basic Information Required
Crude Assay
Intermediate Feed Characteristics
Yields and Properties
Different Process Units
Utilities

Product Blending Rules

Product Specifications
New Trends in fuel production
Environmental Issues
Crude Cost
Product Netback

*** *Formulation of Problem***

Refinery Flow-sheets
Simplified Material Balance
General Formulation
Demand Equations
Product Inventory Control
Product Quality Control
Fixed Composition Blend
Capacity Control/ Constraints
Availability of Feedstock/ Control

*** *Application to a Refinery Worksheet***

Petroleum Product Movement and Product Exchange
Marginal Depot Supply and movements
Commonly Used Methods and Recent Developments
Mathematical Approach to Solution
Linear Programming
Graphic Method
Vendors Software
Discussion and Summary

*** *Crude Oil Yields Refinery Technology***

Introduction
Crude Oil Origins and Characteristics
Crude oil Assay and properties
Crude oil products
Product specifications
Gasoline
Kerosene/ Jet Fuel

Fuel Oil/ Diesel Fuels
Petrochemical Feedstocks
Refineries Complexity
Overall refinery flow: Interrelationship of processes

*** *Petroleum Refinery Processes***

Crude Processing
Desalting
Atmospheric distillation
Vacuum distillation
Heavy Oils Processing – Coking and Thermal Processes
Delayed Coking
Fluid Coking
Flexi-coking
Vis-breaking
Case study – example

*** *Process for Motor Fuel Production***

Fluid catalytic cracking
Hydrocracking
Cat Cracking
Isomerization
Alkylation
Hydrotreating
Catalytic Reforming
Case study – example

*** *Supporting Operations***

Blending for Product Specifications
Hydrogen production
Refinery Gas Plants
Acid Gas Treating
Sulfur Recovery Plants
Case study – example

*** *Refinery Economics***

Residue Reduction
Asphalt and Residual Fuel
Cost Estimation
Economic Evaluation
Case Studies
Group Discussions
Program Evaluation and Summary

Process Plant Optimization, Revamping and Debottlenecking

Course Outline

- * Systematic techniques in the optimization, revamping and debottlenecking of process plant
 - * Characteristics, common misconception and scope of optimization and profitability of process plant
 - * Analysis of various optimization tools used in process plant
 - * Integration of process simulation in operational analysis
 - * Requirements, configuration and guidelines of optimizing the design
 - * Capacity creep and review and improve the methodology of the cost-effective debottlenecking strategy and action plan
 - * Optimizing process operations and process controls applied in process plant
 - * Systematic techniques of optimizing process plant reliability including root cause failure analysis, logic diagrams and fault trees, materials inventory management and turnaround planning
 - * Role and importance of management and enterprise information systems in process plant optimization
 - * Risk management and optimization
 - * Process of optimizing offsites operations including its design, storage facilities and inventory management
 - * Utilities management and rehabilitation including its mechanism
 - * Various revamping strategies and options and the R&D role in new product development and production capacity enhancement
 - * Maintenance, energy, utilities, environmental and safety parameters
 - * Analysis of economic, planning and project management issues
-

Production Planning and Scheduling in Petroleum Refineries

Course Outline

- * ***Application of Planning and Scheduling***
Overview of planning and scheduling in oil refineries
Refinery Configuration:
Hydro skimming Refinery
Refineries with Secondary Conversion Process
Integrated Refineries
Existing and New Refineries
Choice of Crude

Crude oil scheduling
Choice of Processes
Capacity utilization of Crudes
Severity of Process Operations
Cut-points Optimization
Facing Upset Situations
Tankage Requirement

*** *Improving Product Movements and Releasing Tankages***

Basic Information Required
Crude Assay
Intermediate Feed Characteristics
Yields and Properties
Different Process Units
Utilities

*** *Product Blending Rules***

Product Specifications
New Trends in fuel production
Environmental Issues
Crude Cost
Product Netback

*** *Formulation of Problem***

Refinery Flow-sheets
Simplified Material Balance
General Formulation
Demand Equations
Product Inventory Control
Product Quality Control
Fixed Composition Blend
Capacity Control/ Constraints
Availability of Feedstock/ Control

*** *Application to a Refinery Worksheet***

Petroleum Product Movement and Product Exchange
Marginal Depot Supply and movements
Commonly Used Methods and Recent Developments
Mathematical Approach to Solution
Linear Programming
Graphic Method
Vendors Software

Refinery Process Yields Optimization

Course Outline

*** *Crude Oil Yields Refinery Technology***

Introduction

Crude Oil Origins and Characteristics

Crude oil Assay and properties

Crude oil products

Product specifications

Gasoline

Kerosene/ Jet Fuel

Fuel Oil/ Diesel Fuels

Petrochemical Feedstocks

Refineries Complexity

Overall refinery flow: Interrelationship of processes

*** *Petroleum Refinery Processes***

Crude Processing

Desalting

Atmospheric distillation

Vacuum distillation

Heavy Oils Processing – Coking and Thermal Processes

Delayed Coking

Fluid Coking

Flexi-coking

Vis-breaking

*** *Process for Motor Fuel Production***

Fluid catalytic cracking

Hydrocracking

Cat Cracking

Isomerization

Alkylation

Hydrotreating

Catalytic Reforming

*** *Supporting Operations***

Blending for Product Specifications

Hydrogen production

Refinery Gas Plants

Acid Gas Treating

Sulfur Recovery Plants

*** *Refinery Economics***

Residue Reduction

Asphalt and Residual Fuel

Cost Estimation

Economic Evaluation

Risk Assessment and Risk Management for Oil and Gas Projects

Course Content

Day One: Getting Started

Pros and cons of Risk Management

Practical experience with risk assessment & risk management in various industries

Risk Management throughout a project life cycle

Methods to increase company-wide awareness, understanding & senior level support

Risk Management at various levels of an organization

Business Risks vs Technical Risks vs Implementation Risks

Day Two: The Risk Management Process Wheel & Identifying Risk

Proactive Risk Management Process

The Risk Management Process Wheel

The Risk Register

Risk Management Planning

Risk Identification

Risk Identification Tools & Techniques

Day Three: Risk Analysis

Qualitative Risk Analysis

Quantitative Risk Analysis

Day Four: Risk Responses & Managing Risks

Risk Response planning

Building a Risk Management Plan

Calculating Risk Management Budget

Monitoring & Reviewing

Opportunity Assessment

Project Execution Risk Assessment

Day Five: Reporting Risk Management Outcome

Creating an Oil & Gas Risk Questionnaire

Risk Evaluation

Risk Evaluation Report

Course Evaluation

Strategic Talent Management in the Oil and Gas Industry

Course Content

DAY 1: Defining and Attracting Talent in the Oil and Gas Industry

Talent Management – Overview and Background
Talent / High Potential - Defining the Criteria
The Complex Dimensions of Oil and Gas Demographics
Talent Options - Recruit External or Grow Internal
Aligning Talent Management with Organisational Development (OD) and Business Strategy
Utilising Workforce Planning and other Sources of Data
Attraction Strategies – Use of Media and Other Channels

DAY 2: Creating Your High Potential Talent Pool

Talent Management Models, Grading and Structures
Assessment Methods and Systems - Use of Psychometric / Behavioral / Competency Frameworks
Conducting an Effective Talent Gap Analysis
ABC Model of Potential – Getting the Criteria Right
Using the 9 Box Grid, and other Methods to Create Your Talent and High Potential Matrix

DAY 3: Developing Your Talent and High Potentials

Defining High Caliber Development Options
Conducting an Effective Performance Discussion
Creating Individual Development Plans
Powerful Feedback Techniques: Motivating Individuals to Achieve Higher Potential
Coaching for Success

DAY 4: Retaining and Sustaining Your Talent and High Potentials

Career Paths – Guidance for Growth
Using Mentoring Programmes to Develop and Retain Your Talent
Reward Strategies - Intrinsic and Extrinsic Incentives to Motive Your Talent
Managing Expectations and Delivering Workable Outcomes
Growth Rotation Development (assignments, experience strategies)
Creating a Sustainable Talent Pipeline

DAY 5: Strategic Succession Planning and Organisational Capability Review

Defining Your Bench Strength
Succession Planning and the OCR Process
Conducting Effective Calibration Meetings
Formulating a Strategic Talent Plan for the Organization in-line with the Business Strategy
Communicating the Strategy to the Board and the Company
Conclusion and Review

Tank Farm Operations and Performance

Course Outline

*** *Crude Oil and Product Properties***

Stored product properties
Liquefied petroleum Gases
Gasoline
Jet Fuel
Diesel
Light Fuel oil
Heavy Fuel Oil
Bitumen
Crude oil
Light petroleum products
Heavy petroleum products
Chemicals

*** *Safety and Risk***

Firefighting and protection
Ignition sources - Electrostatic charge
Fire detection and firefighting systems
Risk assessments and management
Oil Spills
Secondary Containment, Bund walls
The Ship/Shore Safety Checklist

*** *Tank farms differences and purpose***

Crude Storage
Refined product storage
Gas storage
Chemical Storage

*** *Tank design and engineering considerations***

Introduction to API codes and standards
Roof Types
Fixed Dome and Cone
Floating Roof
Pressurized tanks
Suction levels fixed and floating
Unpumpables
Tank Emissions
Breathing Losses
Manipulation Losses
Measurement and estimation of losses
Emission reduction technologies

Vapor recovery units
Absorption and Scrubbing
Water drainage systems network and procedures
Process water treatment

*** *Tank Terminal Operations***

Transfer Systems
Centrifugal pumps types and operation
Piping systems
Maximum Flow and pressure
Ship-shore Transfers
Loading and unloading Processes
Ship Loading and discharge process
Pipeline transfers
Truck loading
The of Bill of Lading
Sampling and quality control - ISO 17025
Stock loss
Spill and overflow control
Level alarms/ independent level alarms
Tank gauging and metering
Instrumentation

*** *Terminal Management***

Planning and scheduling
Terminal inventory
Unpumpables and pipeline content ownership
Inventory Control
Custody transfer and administration
Transfer Procedures
Inter Tank transfers
Changing service tanks
Pipeline transfer loss
Pipeline thermal relief
Storage and transfer
Tank calibration/ recalibration
Berthing support
Cargo transfer support
Emergency response
Vessel departure support

*** *Tank Maintenance and Inspection***

API 653 Tank Inspection
Tank failure causes and prevention
Settling
Corrosion inspection
Tank cleaning
Bunkering

Product Commingling
Product Blending
Product failures
Blending exercise

*** *International Regulations and Requirements for Oil and Gas Marine Terminals***

Physical, chemical and hazardous properties of contained fluids
ISGOTT - Required notifications in the event of a release
Record keeping and reporting
Release detection, response, reporting and investigation

Training Management and Organisational Learning for Oil and Gas Industries

Course Content

Day One: Organisational Learning Explored

The concept of learning
How does learning differ in the Oil & Gas Industry
Behavioural and other psychological theories
Implications of organisational learning practices
The idea of organisational learning
Redefining organisational learning

Day Two: Training Management Explored

Managing the training function strategically
Training in the Oil & Gas sector
The importance of cost-benefit & ROI
The concept of talent management
Differentiating succession management & talent management
Nationalisation issues

Day Three: Leading Organisation Change

An experience of change
Change at the team level
Change at the organisational level
Key drivers of change
Change management
Case Studies of change management in the Oil & Gas Industry

Day Four: Organisational Development (OD) Explored

History of OD
Organisational development today
Maslow and Hertzberg & The Hawthorne effect

Case studies: Putting OD into practice
Diagnostic tools for OD
Organisational Structures

Day Five: Becoming a Learning Organisation

Understanding the learning organisation
Characteristics of a learning organisation
Are you ready to change?
Benefits and barriers
The Fifth Discipline
Personal action planning



My Happy Training Course for Training and Development

The Mission of **My Happy Training Course** is to help companies and businesses grow by empowering their employees via business and digital skills. Equip your employees with today's most in-demand skills your business needs to reach today's modern customers.



My Happy Training Course is a business/trade name that operates under the legal business entity name of **My Happy Life Project LLC** -a limited liability company incorporated in Wyoming USA in 2021.

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Other business/trade names that operate under **My Happy Life Project LLC** include:

My Happy Review for Online Reviews and Reputation Management

And



My Happy Marketing – Digital Marketing Agency

The mission of **My Happy Marketing** is to make business easier and life happier for local business owners and their customers. We do it by offering easy to use, reliable and affordable digital marketing services.