PETROLEUM TRAINING INSTITUTE
P.M.B. 20, Effurun, Delta State, Nigeria.

2021
BROCHURE

Professional & Specialized Training

LEARNING **SHELL BLOCK**
PTI Conference Centre Complex,
Effurun, Delta State.

For further enquiries contact:

THE CHIEF CO-ORDINATOR,
PTI CONSULTANCY SERVICES LIMITED
PMB 20, EFFURUN, DELTA STATE.
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Mounting of any training shall be confirmed a week to the scheduled date, subject to the minimum class size

Payment should be made Seven to Ten days before scheduled date

Cost and date of the courses are subject to review

PTI Leading in High-tech Manpower Development in the Oil & Gas Sector

The Petroleum Training Institute (PTI) prides itself as the leading technological Institute for the development of high-end technical human capital for the nation's oil and gas sector.

Over the years, the PTI has been tooling oil and gas personnel to meet the challenges of their companies especially, in this competitive business environment. The global oil market gas been massively impeded by the COVID-19 pandemic breakout, crashing oil prices at the global market to the lowest ebb. This, no doubt put so much pressure on the operating cost of businesses; and as a result, most companies are developing cost effective technology to stay afloat in business. To this end, PTI has developed courses to tool oil personnel to meet the strategic needs of the oil & gas and allied companies; as well as to improve the efficiency of key operations in the industry.

As you peruse through the training brochure, we have designed courses that cut across spectrum of operations of the oil and gas sector. The courses can be delivered at the workplace, Petroleum Training Institute and virtually (online). Also, the courses can be tailor made on demand to address the specific need of a company.

At PTI, we put our heart, soul and vision into developing competent technical manpower for Quality Service Delivery at optimal cost.

PTI is prepared to collaborate with stakeholders in the oil and gas sector to develop high-tech personnel that can rival any in the Sub- Saharan Africa.

Dr. Henry A. Adimula,
Acting Principal & Chief Executive,
Petroleum Training Institute,
Effurun, Delta State

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INTERNATIONAL PROGRAMS

(Training Location: London, UK)

STATE-OF-THE-ART FACILITIES MANAGEMENT

Under the prevailing competitive environment, people who direct and coordinates affairs of organizations should be aware and well equipped with modern Facilities Management techniques/skills to ensure desired performance.

This training course which is devised by one of the pioneers of Facilities Management in the UK is tailored to address the missing link between strategic, tactical and operational Facilities Management. Using case studies, the training will teach participants how to use modern facilities management techniques discovered from research and many years of working experience in the industry.
The facilitators are seasoned experts from practice and academia all of whom are widely recognized as leaders in their specialist fields and contributors to courses of professional institutions in the UK.

Course Content
The course is structured in a way that delegates can participate actively in the sessions rather than to sit and be lectured at all day. Each session shall be for maximum of 45 minutes.

- Strategic Facilities management
- Importance and implementation.
- Facilities Policy- developing a case for change.
- Financial Control of Facilities Management
- Facilities Management and Corporate Real Estate
- Facilities Management Procurement
- Analysis of levels in Facilities Management Delivery
- Cost of Facilities Services
- Introduction to and Use of Benchmarking Model- Estates Master
- Whole life sustainability
- Introduction to Cost and Sustainability Model- Comb Cycle
- Workplace arrangement and Management
- Post Occupancy project analysis and delivery
- Facilities Management Practice- modern Concepts.
- Forum Discussions
- Facilitated Workshop sessions z

Learning Outcomes

- Awareness of the missing links between strategic, tactical and operational Facilities Management which causes poor performance.
- Understanding of the keys to effective procurement.
- Ability to effectively integrate facilities management to the achieving overall corporate goal
- Skill and ability to prepare and operate functional Facility Policy
- Skill and ability to organize and implement efficient building maintenance services.
- Skill and ability to effectively integrate Facilities Management personnel with both internal and external stakeholders
- Ability to run in-out Facilities Management services as a business
- Skill and ability to undertake effective performances analysis
- Understanding of when to and when not to outsource
- Understanding of what to and what not to outsource

Target Audience
Directors of Works, Procurement, Maintenance of any organization, Head of FM/Maintenance Department, Facilities Management Consultants, Shopping Complex Manager, Industrial and Commercial Building managers, Logistics/protocol officers, Estate Managers, CEO of Property Development Companies/ Housing Associations, Built Environment professionals, Facility Managers

DURATION / Dates

4 days	Sept. 20-24	June 14-18

OIL AND GAS PROCESSING PROGRAMS

OIL AND GAS PROCESSING PROGRAMS

Course Title and Introduction

HYDROGEN PRODUCTION FROM STEAM REFORMING:

The course will cover all the catalysts, absorbents and adsorbents used for hydrogen production. In general, these units have long periods of operation between shutdowns and correct catalyst loading and activation procedures must be followed to avoid unintended outages.
All of the hydrogen purification options viz wash systems, methanation, PSA or membranes are covered in the course.

Course Content
Increasing the importance of the steam reformer and the reasons behind the change is emphasized

- Refinery hydrogen balance.
- The role of the steam reformer for the production of synthesis gas
- Basic Steam Reformer Design
- Water and steam systems.
- Feedstock and feedstock purification
- Steam reforming chemistry and steam reforming catalyst.
- Reformer metallurgy
- Monitoring and dealing with tube failures.

Learning Outcomes

- Apply and gain in-depth knowledge of hydrogen production by steam reforming.
- Identify the reasons behind the change in emphasis and considers the refinery hydrogen balance.
- Distinguish the role of the steam reformer and understand the basic steam reformer design.
- Heighten their awareness on catalyst absorbents and adsorbents used for hydrogen productions

Target Audience
Those involved in refinery process engineering, unit operations, research and development, sales and refinery technical service. Process engineers from design and construction companies as well as those who provide products and services to the petroleum refining industry will also find the course very useful and informative.

DURATION/Dates

5 days	Mar 1-5	May 3-7	Aug 2-6

Course Title and Introduction

GAS CONDITIONING, TREATMENT AND PROCESSING TECHNOLOGY:

This course is designed to provide participants with an up – to – date overview of gas conditioning and processing technology. This includes product specification and the processes available to condition the gas in order to meet the required specification.

Course Content
Participants will learn the key physical and chemical properties of natural gas components as well as major processes such as Dehydration, Gas Sweetening, Hydrocarbon Dew point Control (HCDP Control), LPG Recovery and Fractionation, Sulphur Recovery and Tail Gas Clean-up.
Also to be covered during the course are the factors to consider in designing and selecting the major process equipment such as the Separator/Fractionator.
Design and operation of process control systems, separator, absorption and fractionation facilities will be taught as well.

Learning Outcomes

- Gain a vast knowledge of natural gas conditioning, treatment and processing
- Identify types of separators and their sizing.
- Understand the importance of water content and dew point applied in gas conditioning and processing technology
- Identify the formation, prediction and inhibition of hydrates and the process of liquid desiccant dehydration.
- Determine the operating variables of gas conditioning and processing technology and recognize enhanced glycol concentration and solid desiccant.
- Recognize the thermodynamics of gas and utilize it for the removal of acid gases such as H2S, CO2, RSH.

Target Audience
Participants should have a degree in science or engineering and some experience in the petroleum industry. Process engineers or operators with an interest in gas conditioning, treatment and processing will find the course very useful and informative.

DURATION/Dates

5 days	Mar 15-19	Jul 5-9	Sept 6-11

Course Title and Introduction

FILTRATION AND SEPARATIONS TECHNICAL TRAINING - PRINCIPLES, APPLICATIONS AND TROUBLESHOOTING:

This course reviews the science behind separation, filtration, coalescing, activated carbon absorption in addition to other related technologies as well as their applications in gas processing and refining industries. Attendees are able to better understand fundamental principles, equipment designs and modes of failure to assist in troubleshooting performance problems. Real cases will be reviewed and discussed.

Course Content
This course is important for several reasons; Poor contamination control is the leading cause of process instability and losses, filtration and separation is often overlooked and poorly understood in many plants. Proper knowledge of separation systems is critical to plant performance. Lack of formal training across process industries leads to uninformed decision-making.

Learning Outcomes
At the end of the course participants would learn:
- Introduction to Process Separation Systems
- Principles of Filtration
- Filtration in Liquid Streams
- Filtration in Gas Streams
- Filtration Vessel Designs
- Principles of Coalescence
- Coalescence in Liquid Streams
- Coalescence in Gas Streams
- Coalescing Vessel Designs
- Activated Carbon Beds
- Centrifuges, Cyclones and Scrubbers
- Membrane Pre-Filtration
- Problem Solving
- Know Real Cases

Target Audience
Process Engineers, Operations and Maintenance Personnel, Managers, Supervisors, Technical Specialists, R&D Personnel, Purchasing Personnel, Engineering & Construction Personnel, Suppliers and Consultants.

DURATION/Dates

2 days	Mar 29-30	Jul 5-6	Nov 1-2

Course Title and Introduction

ASPEN HYSYS: PROCESS MODELLING AND SIMULATION:

ASPEN HYSYS is the leading plant design and simulation tool for the energy industry. It is used for process optimization in design and operations in oil & gas processes. And it accelerates the ability of companies to bring new plants and designs to market in record time. Learn to build, navigate and optimize process simulations using Aspen HYSYS. Participants will learn the efficient use of different HYSYS functions to build steady state process simulations

Course Content
This course will teach process engineering professionals and students how to build, navigate and optimize process simulations using Aspen HYSYS. They will be able to use the different functions of the software to build steady state process simulations.

Learning Outcomes
Knowledge and understanding of:
- Starting with HYSYS
- Equations of State
- Compressor operation in HYSYS to model the compressing process
- Expander operation in HYSYS to model the expansion process
- Heat exchanger operation in HYSYS to model the heat transfer process
- Flash separator operation in HYSYS to model the flash separation process
- Partial oxidation reaction of methane to produce hydrogen

- Developing a model that represents the water gas shift reaction
- Absorber operation in HYSYS to model the absorption process
- Recovery of (NGL) from natural gas

Target Audience
New engineering graduates/technologists who will be using Aspen HYSYS in their daily work, Process engineers doing process design and optimization projects and studies, Plant engineers checking plant performance under different operating conditions, R&D engineers and researchers using Aspen HYSYS for process synthesis

DURATION/Dates

5 days	Mar 22-26	May 17-21
	Aug 9-13	Nov 8-12

Course Title and Introduction

FUNDAMENTALS OF DISTILLATION FOR ENGINEERS (BASIC):

This course is designed to introduce the principles of distillation as a diffusional separation process and describe mathematical and graphical methods for process and plant analysis and design.

Course Content
- Fundamentals of vapour-liquid equilibrium
- Flash distillation
- Continuous distillation and the McCabe-Thiele construction, including consideration of:
- The feed line
- The reflux ratio
- Non-ideal systems
- Batch distillation
- Plate distillation column design.
- Multi – component distillation

Learning Outcomes
- Understand vapour-liquid equilibrium
- Understand flash distillation, continuous distillation and the McCabe-Thiele construction

Target Audience
Early-career engineers, process engineers and technical staff in the refining and petrochemicals industries.

DURATION/Dates

2 days	Mar 24-25	Jun 9-10
	Sept 1-2	Dec 1-2

Course Title and Introduction

FUNDAMENTALS OF DISTILLATION FOR ENGINEERS (ADVANCED):

This course provides a comprehensive understanding of efficient distillation columns operations as well as optimization strategies implementation.
Upon completion of the course, the participants will be able to know about all parameters and profiles for the analysis of a distillation column operation, master the concepts necessary to optimize the operation of a column, identify the performances and limits of different control systems and deepen their knowledge of the detection and effects of deficiencies.

Course Content
- Operating Parameters – Definition and Significance
- Fractionation Capability of an Industrial Distillation Column
- Process Control Parameters
- Equipment Technology and Troubleshooting

Learning Outcomes
- Be able to identify, understand and explain the significance of Operating and Process Control Parameters
- Know Fractionation Capability of an Industrial Distillation Column
- Develop skills and knowledge of equipment Technology and Troubleshooting

Target Audience
Engineers, process engineers, process control personnel and technical staff in the refining and petrochemicals industries.

DURATION/Dates

5 days	Mar 1-5	May 3-7
	Aug 2-6	Nov 8-12

Course Title and Introduction

LIQUEFIED NATURAL GAS (LNG) PROCESSING:

This course provides a comprehensive technical and economic review of the Liquefied Natural Gas industry.

Course Content
Upon completion of the course, participants will be able to review the structure of an LNG chain and the world map of LNG plants, understand main LNG physical properties and specificities, assess LNG facilities' hazards and HSE issues, along with risk mitigation and prevention techniques, grasp main liquefaction processes' operating principles, conditions and constraints, gain an overview of the technology of equipment used in the LNG industry and grasp the essence of LNG markets and contracts.

Learning Outcomes
- Know The LNG World
- Know LNG Specific Properties and Associated Hazards
- Understand Liquefaction and Regasification Process
- LNG Storage, Loading/Off – loading and Transport
- Technology of LNG Specific Equipment
- LNG Plant Operation
- LNG Economic Aspects

Target Audience
Professionals involved or interested in the LNG industry: technical and managerial staff in the LNG industry, equipment providers, personnel from engineering companies, etc.

DURATION/Dates
5 days April 12-16 July 12-16 Sept 13-17

Course Title and Introduction

REFINERY OPERATOR BASIC TRAINING COURSE I:

This course provides operators with the knowledge and know-how required for safe, efficient and reliable field operations. For each equipment type, participants will be exposed to its principle, technology, ancillary systems, monitoring, basic operations, risks, safety devices, good practices. Continuous assessment - written tests and oral presentations will be conducted throughout the training.

Course Content
- Piping & Storage Vessels
- Instrumentation and Control Devices
- Heat Exchanger Equipment

Learning Outcomes
- Valves, fittings, flexible hoses, safety devices/interlocks. Vessels, storage tanks. Identification symbols for various items of equipment.
- Block diagrams, flow sheet, P&ID. Introduction to isometric drawings.
- Field applications: equipment recognition, practical exercise of line-plotting, demonstration equipment in the workshop
- Heat, energy and heat transfer. Heat exchangers: technology, main types, workings and operation.
- Physical variables used in process operations (pressure, temperature, flowrate, density, specific gravity).
- Components of a control loop. Instrumentation: workings and operation.

Target Audience
Operators of oil refineries or chemical plants, without any operator certification background, Technicians or staff to be retrained as operators in the chemical, petrochemical or oil industries.

DURATION/Dates
10 days Mar 15-26 Aug 16-27

Course Title and Introduction

REFINERY OPERATOR BASIC TRAINING COURSE II:

This course provides operators with the knowledge and know-how required for safe, efficient and reliable field operations. For each equipment type, participants will be exposed to its principle, technology, ancillary systems, monitoring, basic operations, risks, safety devices, good practices. Continuous assessment-written tests and oral presentations will be conducted throughout the training.

Course Content
- Basic chemistry. Chemical products and chemical solutions: composition and hazards.
- Distillation: principles of the separation, distillation columns.

- Products, Quality control tests, Sampling.
- Principles of manufacturing processes.
- Plant documentation: inventory, content, usage.
- Radio communication. Teamwork.
- Reporting and handover duties.
- Job Safety Analysis for field operators' routine activity (equipment checks, circuit alignment, sampling, etc.).
- Example of procedures for equipment shut-down and start-up.
- Case studies - Group work. Lessons learned.
- On-site practical exercise on different processes (main equipment, operating conditions).
- Role plays.

Learning Outcomes

- Understand Rotary Machinery, Fluid flows, Rotating machinery field recognition, Centrifugal and positive displacement pumps, Centrifugal and reciprocating compressors.
- Gain understanding of Single stage, back-pressure steam turbines, Electric motors operation.
- Explain Processes – Products – Sampling & Testing – Utilities
- Understand Notion of material and heat balance.
- Manufacturing process diagram.
- Utilities: flare network, waste water treatment, cooling water, air production.
- Operators' Tools – Skills & Organization
- Understand Safety Requirements for plant operations
- Understand Product hazards: flammability, toxicity, physical hazards.

Target Audience

Operators of oil refineries or chemical plants, without any operator certification background, Technicians or staff to be retrained as operators in the chemical, petrochemical or oil industries.

DURATION/Dates

10 days	Mazy 17-28	Nov 8-19

Course Title and Introduction

RECENT DEVELOPMENTS IN OIL REFINING TECHNOLOGIES:

This course provides an up-to-date information on present and future trends of oil refining processes.

Course Content

Upon completion of the course, participants will be able to get a broad vision of future from technical, safety and environmental constraints for the refining industry, quote the recent developments in oil refining processes, explain how the latest breakthroughs can help meet the new challenges.

Learning Outcomes

- Refinery Products & Process Evolution Outlook for 2020
- Atmospheric & Vacuum Distillation: New Concepts
- Catalytic Reforming & Isomerization
- FCC: More Polypropylene, More LCO
- Gasoline & Sulfur Reduction Strategies
- Ultra – low Sulfur Diesel Production & VGO Deep Hydrotreatment
- Hydrocracking for Vacuum Distillates & Residues
- Hydrogen Balance
- Thermal Conversion of Residues
- Criticity of Sulfur Units

Target Audience

Engineers, Managers, HSE Professionals, and other oil and gas professionals

DURATION/Dates

5 days	Mar. 8-12	June 14-18	
	Sept. 7-11	Nov. 29	Dec. 3

Course Title and Introduction

BASIC REFINING OPERATIONS:

This course is designed to give participants basic understanding of the functions and operations of petroleum refineries. It provides an essential back-ground to effective operation of the process units in a refinery.

Course Content

- Review of basic Petroleum Chemistry
- Properties and flow of fluids

- Elements of Petroleum Refining
- Tanks, Vessels and Columns
- Essential Utilities. Oil Movement and Storage
- Corrosion and Maintenance Problems.

Learning Outcomes
- Understand refining operations
- Understand fluid and flow properties
- Understand process equipment, corrosion and maintenance problems.

Target Audience
Process Operators, Maintenance Technicians and Technologists, Oil Movement Operators,
Shift Supervisors. Quality Technicians,
Refiners in Vegetable Oil Plants, etc.

DURATION/Dates
5 days Mar 8-12 June 14-18

Course Title and Introduction

Natural Gas Gathering, Transmission and Distribution Management:
To expose participants to surface operations in associated and non-associated petroleum gas handling and simple principles of Gas Plant Management.

Course Content
- Review and overview of world natural gas scenario.
- Hydrocarbon fluids mechanics
- Natural gas reservoirs/Subsurface behaviour of hydrocarbon fluids.
- Gathering/Pipelines system design, Conceptualization sizing and topography and route selection.
- Gas Pipelines simulation/Network Analysis.
- Principles and practice of hydrocarbon fluids separation.
- Gas dehydration and compression systems.

Learning Outcomes
- Technical problems in natural gas transmission system and management/control.
- Characterization and compositions of natural gas and related derivatives.
- Understand Natural Gas production techniques and operation (Surface/Subsurface)
- Rotating machines and their Application/Optimization in natural gas transport.

Target Audience
Field Operators, Technical Supervisors Engineers and Management staff involved in Gas Operations in major Petroleum Production and Service Companies, Gas Companies, Refinery Staff involved with Gas Plant Systems and Decision Makers in the Petroleum Industry.

DURATION/Dates
3 days Mar 22-24 July 7-9
Sept 6-8

Course Title and Introduction

ADVANCED NATURAL GAS GATHERING, TRANSMISSION DISTRIBUTION AND MANAGEMENT:

This course provides participants with an advanced training in Gas Engineering Operation. Trainees will be exposed to an in-depth and adequate theoretical and practical Gas Systems design and principles in managing a gas operation and enterprise development.

Course Content
- Applied Natural-Gas Systems and Thermodynamics Laws
- Natural Gas Engineering
- Natural Gas Reservoirs and Gas Wells
- Natural Gas Wells Inflow Performance and Evaluation.
- Applied Compressor Engineering Operations and Management.
- Energy Economics in Natural Gas Engineering Operations.
- Natural Gas Systems Process Dynamics and Control.
- Natural Gas Procession and Conditioning.
- Natural Gas Projects Development and Economics.
- Natural Gas Project Management
- LPG and LNG Systems development and Management
- Fundamentals of Petroleum Laws
- Managing a Natural Gas Enterprise

Learning Outcomes
- Understand units' operations in Natural Gas Operations Engineering.
- Understand Applied Heat Transfer and

Thermodynamics processes in natural gas Engineering.
- Real Gas Laws and Super Compressibility
- Understand Natural Gas Pumping Units, Auto Refrigeration and Non-Compressor Operations in Natural Gas Operations and System Management.
- Understand Fundamentals of Petroleum Laws and how to manage a Natural Gas Enterprise
- Relating MACHINES Operations Management
- Fundamentals of Gas Projects Financing Accounts.
- Gas Production Control and Management.
- Natural Gas Systems Performance Auditing.
- Decision Analysis and System Overall Management.

Target Audience

For Engineering Managers, Gas affairs managers, executive directors of operations, and managing Directors of gas companies, Chief Engineers Directors and Senior Engineers with high level Management of Operational responsibilities, Gas Operations Engineers and high-level Engineers or technical manpower who may have attended the first module of this course as a pre-requisite titled "Natural Gas Gathering, Transmission and Distribution"

DURATION/Dates

3 days	Mar 29-31	Aug 2-4
	Oct 25-29	

Course Title and Introduction

SAFE APPLICATION OF PLANT UTILITIES:

A practical course to acquaint staff with plant utilities generally and introduce them to their application with emphasis on safety for efficient and effective production

Course Content
- Notions of Utilities
- Heat Transfer, Thermal properties of matter.
- Water Treatment
- Electrical Equipment

Learning Outcomes
- Identify and understand plant utilities
- Understand heat transfer and safety issues
- The role of water treatment
- Understand electrical equipment utilities, use and maintenance

Learning Outcomes
- Identify and understand plant utilities
- Understand heat transfer and safety issues
- The role of water treatment
- Understand electrical equipment utilities, use and maintenance

DURATION/Dates

4 days	May 3-8	Oct 11-14

Course Title and Introduction

WATER TREATMENT PROCESSES FOR INDUSTRIAL AND DOMESTIC CONSUMPTION:

Operating a water treatment plant can become very tedious if basic concepts are not adequately understood. This course if designed to provide the engineer or operator the skills and knowledge to operate their water plants safely, professionally and in accordance with international best practices.

At the end of this course, the trainee should be able to understand the principles of water treatment and thereby acquire the capability to operate their plants satisfactorily.

Course Content
- Introduction to water chemistry and analysis
- Basic unit operations/processes in water treatment.
- Aeration, Sedimentation, Softening, Filtration, Stabilization, Adsorption, Disinfection & Iron removal
- Preliminary treatment
- Corrosion, protection in the water industry
- Boiler-Water and Cooling water treatment
- Recycling of waste water e.g. cooling water
- Basic unit operations/processes in waste water recycling (e.g. Cooling Tower)
- Economics of waste water recycling

Learning Outcomes
- Understand principles of water treatment
- Acquire capability to operate water treatment plants satisfactorily
- Understand Water treatment waste disposal
- Safety in water treatment plants
- Process and quality control in water treatment
- Understand environmental laws on Industrial/domestic waste water treatment and discharge.

Target Audience
Process Engineer, Plant Operators, Production, Supervisors, Power plant and Utilities Engineers/ Operators, Government Agencies with duties related to energy etc

DURATION/Dates

5 days	May31-4Apr	July 5-9	Oct 18-22

Course Title and Introduction

LABORATORY MANAGEMENT:

This course is designed to provide the participants with the knowledge and skills of laboratory management.

Course Content
- Laboratory types, fittings and furnishings
- Designing a Laboratory
- Record keeping in the laboratory.
- Laboratory discipline
- Installing Laboratory Equipment

Learning Outcomes
- Know type of laboratories and their furnishing and fittings
- Understand laboratory layout
- Understand the principles of designing laboratory stores.
- Know the correct methods and places for Installing.
- (I) Balances
- (ii) Barometers
- (iii) Galvanometers
- (iv) Distilling units
- Understand the management of stores
- Understand the principles of store keeping.
- Know the acquisition, Storage, and use of technical information.

Target Audience
Laboratory Supervisors, Laboratory Superintendent, Chemists, Laboratory managers sand other middle and senior cadres of industrial, and specialized laboratories.

DURATION/Dates

5 days	Mar 22-26	June 14-18	Nov 1-5

Course Title and Introduction

INTRODUCTION TO NATURAL GAS TECHNOLOGY:

This course introduces participants to natural gas technology concepts, principles and practices. Delegates will be exposed to systems, processes and controls and facilities for Natural Gas production.

Course Content
- Fundamentals of Natural Gas Technology
- Natural Gas Chemistry and Physics
- Natural Gas Characterization and Composition
- Hydrocarbon fluids Mechanics
- Types of Natural Gas
- Natural Gas Reservoirs / Classification
- Elements of Natural Transmission
- Natural Gas Processing
- Elements of Gas Metering

Learning Outcomes
- Understand the basic Concepts and applicable Sciences and Mathematics of Natural Gas Technology.
- Understand The field and plants requirements,
- Operational Safety requirements,
- Equipment / Machinery Configuration and requirement
- Recognize the Systems processes and Control requirements and facilities
- Appreciate the Quality Control and Quality Assurance
- Know Criteria, market and Customers demands.

Target Audience
Craftsmen, Technician, Technologists, Engineers.

DURATION/Dates

5 days	Mar 15-19	Jul 5-19
	Dec 6-10	

Course Title and Introduction

NATURAL GAS PRODUCTION TECHNOLOGY:

This course aims to give deep knowledge to production personnel involved with natural gas and associated liquids to acquaint or reacquaint themselves with gas production unit

operations

Course Content
- Natural Gas Exploration Technology
- Natural Gas Drilling Engineering Technology
- Natural Gas Well Completioning Technology
- Natural Gas Reservoirs Technology
- Natural Gas Production Tests
- Natural Gas Production Control
- Field handling of Natural Gas
- Plant Handling of Natural Gas
- Natural Gas Processing and Control
- Natural Gas Storage
- Natural Gas Transmission and Distribution Technology.

Learning Outcomes
Understand the various model of Natural Gas Technology, source of Gas and types. Technique, Types of Natural Gas production, Control Techniques, Field production, Storage, Formation Evaluation, Reserve Estimates, Production Decline, Material Balance, Volumetric.
Natural Gas Exploration / Exploitation, Subsurface Operations, Surface Operations, Natural Gas Drilling Technology, Natural Gas Drilling and Well Complefuid, Gas Well Tests and Test Procedures.

Target Audience
Craft men, Technicians, Technologists, Engineers, Senior Engr, Chief Engineers, Managers e.t.c.

DURATION/Dates
5 days Apr 12-16 Aug 23-27

Course Title and Introduction

BASIC NATURAL GAS PROCESSING TECHNOLOGY:

This course seeks to provide delegates skills and knowledge to identify technical Problems associated with Gas Processing, principles of Reservoir Hydrocarbon Fluids Separation, and natural Gas Dehydration Technology/Elements of gas thermodynamics

Course Content
- Elements of Hydrocarbons Nomenclature and Classification
- Elements of Source Point Phenomenon and Gas Reservoir Technology
- Hydrocarbons Systems Physical properties
- Qualitative and Quantitative Natural Behaviour
- Basic Natural Gas Thermodynamics
- Water Hydrocarbon Phase Behaviour
- Natural Gas Processing Technology
- Natural Gas Conditioning and Stabilization
- Systems Process Control and Management

Learning Outcomes
- Understand source of Gas and Types
- Understand Mechanics of Natural Gas Processing Science and Technology
- Understand Justification for Gas Processing and Science of Impurities
- Be familiar with unit operation of the Separator Systems
- Identify Process Variables and Control
- Understand Gas Scrubbing / Straining
- Familiarize with rotating machines application in Gas Processing

Target Audience
For Whom: Craftsmen, Technician, Technologist, Engineers, Manager e.t.c.

DURATION/Dates
5 days Mar 22-26 Aug 16-20

Course Title and Introduction

NATURAL GAS PROCESSING AND CONDITIONING TECHNOLOGY:

This natural gas course aims to give deep knowledge to production and processing personnel involved with natural gas and associated liquids to acquaint or reacquaint themselves with gas conditioning and processing unit operations.

Course Content
- Principles of Natural Gas Processing.
- Elements of Heat Transfer Technology.
- Natural Gas Separator Systems Technology.
- Basic Separator Component and Mechanism.
- Types of Separators.
- Natural Gas Processing Technology.
- Natural Gas Dehydration Technology.

- Natural Gas Conditioning Technology.
- Technology Problems in Natural Gas Processing.

Learning Outcomes

- Select and evaluate processes used to dehydrate natural gas, meet hydrocarbon dew point specifications and extract natural gas liquids
- How to apply thermodynamic property correlations to the design and evaluation of gas processing facilities
- Equipment sizing methods for major process equipment
- To recognize and develop solutions to operating problems and control issues in gas processing facilities
- Technical fundamentals, property correlations, phase behavior and applied thermodynamics
- How to apply phase behavior principles and phase diagrams to design and operating problems
- How to apply thermodynamic laws and principles to equipment design and operation

Target Audience

Senior Technicians, Technologists, Engineers, Managers, Senior Managers, Executive Directors / MD's

DURATION/Dates

5 days	May 3-7 Aug 23-27
	Nov 22-26

Oil and Gas Technology Programs

Oil and Gas Technology Programs

Course Title and Introductio

INTRODUCTION TO RESERVOIR ENGINEERING:

This course will provide the participants with top-notch training and practical experience on the basics of reservoir engineering. It will cover the role of reservoir engineers in exploration and production. Trainees will also learn about fluid and rock properties used in reservoir engineering applications and the fundamental concepts of fluid flow in porous media. Multiphase situations, types of oil and gas reservoirs, reservoir drive mechanisms, the basics of material balance and decline curve analysis, and reserve definitions will also be discussed.

Course Content
This course is designed to help participants develop a complete understanding of the reservoir life cycle, reservoir environment and formation properties, Darcy's Law, and API correlations. By the end of the course, participants will have gained a foundational understanding of reservoir engineering that they can use while moving forward in their training.

Learning Outcomes
- Reservoir Engineering Basics
- Reservoir Conditions
- Understanding Reservoir and its Production Capacity
- Reservoir Drive
- Reserves
- Participants will discuss the definition of reserves and the recovery factor – API correlation by hands on exercises on RF estimations. During this day, estimation of oil-in-place and gas-in-place concepts will be covered. The day will end with use of production decline curves in reserves estimations.

Target Audience
The course is designed for engineers and geoscientists working in Exploration and Drilling within the scope of Reservoir Optimization.
Exposure in oilfield is beneficial but not essential.

DURATION/Dates
5 Days May 3-7 Aug. 9-13

Course Title and Introduction

PRACTICAL RESERVOIR ENGINEERING WITH PETREL AND ECLIPSE:

Introduction to Reservoir Engineering covers the fundamentals, with a primary focus on understanding fluid flow in porous media. Participants will learn reservoir engineering based on the application of analytical techniques.

Course Content

Learning Outcomes
- Fundamentals & Darcy's Law
- Well and Reservoir Concepts
- Well Testing and Analysis
- Principles of Reservoir Simulation
- History Matching and Prediction

Target Audience
The course is designed for engineers and geoscientists working in Exploration and Drilling within the scope of Reservoir Optimization.
Exposure in oilfield is beneficial but not essential.

DURATION/Dates
Five (5) Days April 19-23 Sept. 6-10

Course Title and Introduction

PVT PROPERTIES OF RESERVOIR FLUIDS:

Our PVT training focus is on the theoretical and practical understanding of key PVT concepts along with the use of some software; trainees will learn various methods for obtaining values of reservoir fluid properties from laboratory data and correlations.

Course Content
Chemical properties of hydrocarbons, conventional laboratory PVT (Pressure-Volume-Temperature) tests and quality control will also be covered. Trainees will learn about phase diagrams, mixing rules, EOS, EOS tuning, and fluid properties while attending this course. Each day participants will be given examples and problems to solve. This is designed in such a way that the confidence and understanding of the participants will be greatly enhanced so as to manage problem concerning reservoir fluid properties.

Learning Outcomes
- Fundamentals of PVT (Pressure-Volume-Temperature)
- PVT Fluid Properties, Reporting and Evaluating
- Development of Equation of State (EoS) Models
- Tuning and Data Requirements
- Oil Filed Applications

Target Audience
Operations, Production, and Reservoir Engineers

DURATION/Dates
Five (5) Days June 14-18

Course Title and Introduction

INTEGRATED RESERVOIR MANAGEMENT:

This course will focus on fundamental techniques deploy by asset management teams in modern reservoir management.

Course Content
The training will span across Data acquisition, analysis, and modeling. The reservoir model, production operations, and reservoir management economics will also be discussed. Trainees will take part in case studies that include new field, mature fields, brown fields, waterfloods, and enhanced recovery projects across the spectrum of oil fields in the Gulf of Guinea. Integrated management examples for new and mature fields and for a waterflooding will be discussed in a workshop environment

Learning Outcomes
- Reservoir Management Concepts and Processes
- Characterization and Analysis
- Statistical Analysis and Performance Analysis
- Dynamic Model
- Selecting a Project

Target Audience
Engineers, geoscientists, operating personnel, and asset team members.

DURATION/Dates
Five (5) Days March 22-26 Oct.11-15

Course Title and Introduction

WELL TEST DESIGN AND ANALYSIS:

This course has been designed to help our trainees have a grasp of the different types of tests and techniques, both analytical and graphical, for data representation and analysis of well tests. Such techniques include diagnostic plots-derivative for draw down, and buildup tests.

Course Content
Trainees will learn about the interpretation of complex data, such as those from well test in naturally fractured reservoirs, hydraulically fractured wells, horizontal wells, along with gas and gas condensate reservoirs. Each day participants will see examples of the types and techniques discussed along with practice problems.

Learning Outcomes
- Types of Test Analysis
- Diagnostic and Derivative Analysis
- Types of Well Testing
- Analysis Gas and Gas Condensate Reservoirs
- DST

Target Audience
Reservoir engineers, production engineers, Wireline operators, BHP survey supervisors, engineers and technicians who need insight into BHP surveys and analysis and any field personnel involved with the design and interpretation of well tests

DURATION/Dates
Five (5) Days April 19-23 Sept.13-17

Course Title and Introduction

EOR PROCESSES: CHEMICAL, MISCIBLE AND THERMAL:

This course presents a comprehensive summary of various technology use in chemical, miscible, and thermal enhanced oil recovery processes. The topics that are also covered include fractional flow theory, Cyclic Steam Stimulation (CSS), Steam Assisted Gravity Drainage (SAGD), and some other EOR methods (including the newly introduced hybrid processes). For each technique theoretical and practical aspects will be discussed in detail along with case studies and field examples.

Course Content
Trainees will learn about different EOR processes, fundamental science and engineering behind EOR applications, fluid sampling, testing and characterization. They will also learn about Phase behavior fundamentals, EOR simulation process and workflow, fractional flow theory, minimum miscibility pressure and thermal recovery processes.

Learning Outcomes
- Enhanced Oil Recovery Fundamentals
- Phase Behavior Fundamentals
- Fractional Flow Theory
- Minimum Miscibility Pressure
- Thermal Recovery Processes

Target Audience
Reservoir and petroleum engineers, geologists, petrophyicists, workover and production engineers, researchers and/scientists, and others interested in EOR processes.

DURATION/Dates
Five (5) Days May 17-21 Nov.15-19

Course Title and Introduction

FUNDAMENTALS OF FIELD DEVELOPMENT PLANNING:

This Field Development Planning course provides participants with an opportunity to learn the fundamental approach for working and writing a Field Development Plan. The plan is a document that is an output of a sequence of decision and discipline-based tasks designed to come up with a development plan. It is, also, a basis for coming up with a robust way of developing, producing, and maintaining hydrocarbon resources.

Course Content
The participants will be introduced to all these concepts as they are applied to the process of coming up with a development plan in relation to the reservoir life cycle. This course will acquaint engineers, geoscientists, and operating personnel with the basic techniques used by asset management teams.

Learning Outcomes
- FDP Overview
- Reservoir Model – Static
- Reservoir Model – Dynamic
- Facilities, Economics and Optimization
- Development Examples – New Field, Mature Field, Water flood

Target Audience
Reservoir and petroleum engineers, geologists, petrophyicists, workover and production engineers, researchers and/scientists, and others

DURATION/Dates
Five (5) Days March 8 - 12 July 5-9

Course Title and Introduction

WATER FLOODING MANAGEMENT:

This course will cover water flooding and the distribution of immiscible fluids in a reservoir.

Course Content
During this course, participants will also learn about the process of immiscible displacement in a reservoir along with the water flood pattern options and its effects on the selection and orientation of flood performance. Other concepts that will be covered include the prediction of water flood performance by the application of classical water flood predictions. Analytical techniques and linear fractional flow theory will be discussed. Participants will also be able to see a simulation of water flooding.

Learning Outcomes
- Introduction to Water flooding
- Performance and Processes of Water flooding
- Flow Theory and Analysis Methods
- Analytical and Prediction Methods
- Simulations and Field Examples

Target Audience
Same as above

DURATION/Dates
Five (5) Days June 14-18 Oct.11-15

Course Title and Introduction

RESOURCES AND RESERVES EVALUATION:

This course will include the presentation of various reserve estimating methodologies, to include the difference between resources and reserves. The classifications and definitions of these reserves and resources, along with a guideline for the application of these definitions will be covered. PRMS, SPE, WPC, AAPG, SEC, and other regulatory authority guidelines will be discussed.

Course Content
The course will update G&G and reservoir engineers with the newest and most accurate methods for obtaining the value of a reserve. Following the completion of this course, all participants should be able to manage deterministic and probabilistic methods, with the aim of gaining a thorough understanding of various reserve levels and their equivalence in both systems

Learning Outcomes
- Resource Classification
- Petroleum Economics
- Deterministic Reserves
- Statistics, Probability, and Uncertainty
- Reserve Estimation

DURATION/Dates
Five (5) Days March 22-25 Aug. 2-6

Course Title and Introduction

FORMATION TESTING: WIRELINE AND LWD (REQUIRES SOFTWARE; INSITUPRO):

This five day course will consist of theoretical and practical classroom session with the last day of the course being devoted to Wireline, Logging While Drilling (LWD), and Pressure Volume Temperature (PVT) lab to see Formation Testing (FT) tools and PVT lab facilities/experiments. This course will also include all FT applications, including pressure surveys, gradient analysis, sampling and downhole fluid analysis, FT pressure transients, and FT In-Situ Stress testing.

Course Content
Experience professionals will provide participants with presentations of tools, operations, and the latest interpretation advances. The participants will also have various practical exposure sessions with real data and InSituPro software. The class will be 50% classroom learning and 50% practical application with exercises, including visits to Wireline, LWD, and PVT laboratories

Learning Outcomes
- InSituPro Software and Well Pressure Testing
- IPTT and Downhole Fluid Analysis
- LWD, CHDT, and In-Situ Stress Testing with MDT
- Pressure Testing and Application
- Visits and Review

Target Audience
Same as above

DURATION/Dates
Five (5) Days April 19-23 Oct. 4-8

Course Title and Introduction

FUNDAMENTAL OF FLOW ASSURANCE:

Optimum flow assurance design and operation requires the evaluation of all disciplines interfacing flow assurance, as well as careful consideration of the interactions between the fluid, reservoir, wells, pipelines, surface facilities, and the surrounding environment.

Course Content
The participants' knowledge will be enhanced in various flow

assurance problem, inorganic oilfield scale principles and fundamentals, Participants will learn about exotic mineral scale, prediction and modeling of inorganic scales, the design of a field scale management program, and recent developments in scale prevention. The problem, deposition site, impact, composition and structure, and detection of hydrates.
They will also learn about characteristics, mechanisms and about various control, prevention and remediation methods of parrafins and Asphaltenes.
Additionally, organic deposition model and emulsions along with various forms of corrosion and mechanisms with special emphasis on CO2 and H2S corrosion with Corrosion inhibitor application and oilfield management guidelines.

Learning Outcomes
Participants will be able to;
- Describe fluid-related issues and how to obtain appropriate fluid samples to assess risk of those issues
- provide understanding of what key project decisions that need flow assurance input
- Knowledge of software and methods to assist in flow assurance engineering

Target Audience
FDP managers, operation managers of fields with long flow lines between wellheads and processing facilities, Aspiring Flow Assurance Engineers and Production Chemists and other Engineer in related fields.

DURATION/Dates
Five (5) Days June 7-11 November 1-5

Course Title and Introduction

ROCK PHYSICS – INTEGRATING PETROPHYSICAL, GEOMECHANICAL AND SEISMIC MEASUREMENTS:

Rock Physics is a key component in oil and gas exploration, development, and production. It combines concepts and principles from geology, geophysics, petrophysics, applied mathematics, and other disciplines. Rock physics provides the empirical relationships, understanding and theory to connect petrophysical, geomechanical and seismic data to the intrinsic properties of rocks, such as mineralogy, porosity, pore shapes, pore fluids, pore pressures, stresses and overall architecture, such as laminations and fractures.

Course Content
The participants will be taken through introduction to rock physics and petrophysics, while reviewing Hooke's law, anisotropy and elasti wave velocities, concept of the representative elementary volume, Voigt/Reuss and Hashin-Shtrikman bounds, Modulus-porosity relations, Gassmann's equation and fluid substitution. Also, diagenetic and sorting trends in velocity-porosity data etc, Biot theory, patchy saturation, squirt flow, pore pressure and the concept of the effective stress, fracture gradient and fracture reservoirs

Learning Outcomes
Attendees will obtain an understanding of the sensitivity of elastic waves in the earth to mineralogy, porosity, pore shapes, pore fluids, pore pressures, stresses, and the anisotropy of the rock fabric resulting from the depositional and stress history of the rock, and how to use this understanding in quantitative interpretation of seismic data and in the construction of mechanical earth models

Target Audience
Geoscientists, petrophysicists, and engineers wishing to understand rock physics and learn how to work together in integrated teams to build geomechanical models.

DURATION/Dates
Five (5) Days July 12-16

Course Title and Introduction

PORE PRESSURE PREDICTION METHODS:

A predrill estimate of formation pore pressure is a key requirement for successful exploration and drilling. During the exploration phase, knowledge of the spatial distribution of formation pressures can be used to develop fluid migration models, to study the effectiveness of seals, and to rank prospects. During the drilling phase, a pre-drill pore pressure estimate allows the appropriate mud weight to be selected and the casing program to be optimized, thus enabling safe and economic drilling.

Course Content
This course will cover the fundamental principles of pore pressure modeling and application to oil field problems. The basic concepts used in pore pressure prediction will be presented, and methods for estimating pore pressure using log and seismic data will be explained and discussed. The

discussion will focus on deriving a calibrated pore pressure model from seismic velocities. This implies calibration with offset well data in order to derive a calibrated velocity-to-pore pressure transform.

Learning Outcomes
By understanding how the pre-drill pore pressure model is built, and what kind of calibration data is necessary, the course participant will get a sense of how to update and re-calibrate the model in real time while drilling. The following topics will be addressed: Processes responsible for abnormal pressure, Methods of pore pressure prediction and detection, Data requirements and how to deal with data gaps, Model calibration, Advantages and disadvantages of seismic and resistivity-based pore pressure prediction, Real time updating and uncertainty analysis.

Target Audience
Exploration and development geologists, petrophysicists, geophysicists, drilling engineers, completion engineers and reservoir engineers who need an essential understanding of the impact of pore pressure on drilling, wellbore stability, and reservoir management.

DURATION/Dates
Five (5) Days July 5-9

Course Title and Introduction

CORROSION, METALLURGY FAILURE ANALYSIS AND PREVENTION: CORROSION TECHNOLOGY CENTRE

This course aims to provide the participants with an understanding of why and how corrosion occurs, the metallurgical and environmental factors influencing corrosion, and practical methods of corrosion control and failure prevention.

Course Content
Outstanding experience with corrosion modeling and testing, thorough knowledge of corrosion control and electrical principles, In-depth knowledge of Boiler, Piping and Pressure Vessel Code, Solid understanding of DOT regulations related to corrosion testing and record keeping, familiarity with corrosion testing and cathodic protection equipment.
Facilitators must be either API or NACE certified.

Learning Outcomes
Participants will be able to grasp the basic concepts related to corrosion, metallurgy and failure analysis, and to apply the state-of-the-art technology in their workplace.

Target Audience
corrosion practitioners, failure analysis personnel, designers, technical managers, inspection and maintenance engineers, coatings and weld inspectors, quality control personnel and anyone who is interested in corrosion, metallurgy and materials failure analysis and its prevention.

DURATION/Dates
Five (5) Days April 19-23 July 5-9
November 23-27

Course Title and Introduction

API 571 DAMAGE MECHANISMS AFFECTING FIXED EQUIPMENT IN THE REFINING AND PETROCHEMICAL INDUSTRY (TRAINING & PREPARATORY CLASS):

This is a preparatory class for the candidate of API 571 certification examination.
Where we cover all the topics related to Damage Mechanisms Affecting Fixed Equipment in the Refining and Petrochemical industry

Course Content
This corrosion short course aims to provide the participants with a thorough understanding of the various damage mechanisms contained in the latest edition of API RP 571-2011 that can affect process equipment, the type and extent of damage that can be expected, and how this knowledge can be applied to the selection of effective inspection methods to detect size and characterize damage. The 66 damage mechanisms to be discussed in this corrosion short course are common to a variety of industries including refining and petrochemical, pulp and paper, and fossil utility

Learning Outcomes
Identification and understanding of the various damage mechanisms which will help when implementing the API Inspection Codes (API 510, API 570, API 653) and in carrying out risk based inspection (RBI) per API 580 and API 581.
When performing a fitness-for-service (FFS) assessment using API 579, the damage mechanisms need to be

understood and need to be considered when evaluating the remaining life.

Target Audience
Designers, Inspection Engineers, Maintenance Engineers, Plant Inspectors, Mechanical Engineers, and Process Engineers in the refining and petrochemical industries.

DURATION/Dates
Ten (10) Days April 19-30 Oct. 4-15

Course Title and Introduction

CO_2 CORROSION MODELLING FOR THE PREDICTION OF INTERNAL CORROSION IN OIL AND GAS PIPELINES AND PRODUCTION TUBING:

Corrosion Technology Centre
This 5-day specialized practical course covers fundamentals of corrosion, key factors influencing CO2 corrosion, and all the details on CO2 corrosion modeling for the prediction of internal corrosion in oil and gas pipelines.

Course Content
Course outline include fundamentals of corrosion, key factors influencing CO2, overview , selection and comparison of various CO2 Corrosion models etc.

Learning Outcomes
The course will cover the overview of a dozen of empirical and mechanistic carbon dioxide corrosion models, CO2 corrosion model comparison, CO2 corrosion model selection, Co2 corrosion model validation and extensive hands-on modeling exercises. A practical guide for CO2 corrosion modeling strategy is also presented.

Target Audience
Contractors, Designers, Consultants involved in CO2 Corrosion Prediction.
Engineers and technologists in charge of pipeline integrity.
Technicians and maintenance personnel who deal with internal corrosion in oil and gas pipelines and production tubing.

DURATION/Dates
Five (5) Days May 17-21

Course Title and Introduction

Design and Operation of Pipeline Cathodic Protection Systems – Design, Installation, Operation, Maintenance, Survey and Monitoring:

Corrosion Technology Centre
This 5-day course covers both the fundamentals and practices in the design, installation operation, maintenance, survey, monitoring, and trouble-shooting of pipeline cathodic protection systems.

Course Content
Corrosion and cathodic protection, corrosion potential, factors influencing the operation of a corrosion cell, cathodic protection design procedure, determining current requirements, calculation of cathodic protection circuit resistances, calculation of system life and number of anodes, calculation of driving voltage, sample cathodic protection designs and system performance evaluation etc.

Learning Outcomes
Knowledge of fundamentals and practices in the design, installation operation, maintenance, survey, monitoring, and trouble-shooting of pipeline cathodic protection systems are targeted learning outcome

Target Audience
Engineers and technologists who are in charge of pipeline cathodic protection systems.
Designers who are interested in cathodic protection technology for corrosion prevention of pipelines.
Technicians and maintenance personnel who deal with installed cathodic protection systems.

DURATION/Dates
Five (5) Days June 21-25

Course Title and Introduction

CORROSION CONTROL BY MATERIAL SELECTION AND DESIGN:

Corrosion Technology Centre
It is always easier and cheaper to erase lines on a drawing than to repair or replace failed equipment or components in service. The theme throughout the course is how to put the right material in the right place in the right way. Practical

rules in selection of materials and design guidelines against many different types of corrosion will be presented. Numerous case histories of real-life problems and practical solutions will be discussed.

Course Content
This course will cover importance of design in corrosion prevention, practical corrosion cells commonly encountered in design, material selection for corrosion control – Metals and Alloys, nonmetals, Design solutions to corrosion problems based on types of corrosion etc

Learning Outcomes
Participants will learn practical rules and codes in selection of materials and design guidelines against many different types of corrosion.

Target Audience
corrosion practitioners, researchers, designers, technical managers, inspection and maintenance engineers, quality control personnel and those involved in failure analysis to update their appreciation of corrosion prevention through materials selection and design.

DURATION/Dates
Five (5) Days May 17-21 September 20-24

Course Title and Introduction

Oilfield Corrosion Management:
This course will cover the fundamentals, mechanisms, and the main causes of corrosion in the oil and gas production system. It will also cover the corrosion control and monitoring methods used in the oil and gas production systems. This course will contain practical examples of these in the oil and gas industry

Course Content
- Corrosion Principles and classification
- CO2 and H2S Corrosion and Corrosion Inhibition
- Material Selection
- Erosion
- Pipeline External Corrosion

Learning Outcomes
Participants will have learned how to identify the corrosion mechanism, estimate and predict the corrosion rate, select material for different corrosion environments, evaluate and select corrosion inhibitors for different corrosion environments, and estimate the erosion rate. Participants will also learn how to select the corrosion monitoring techniques and elaborate on a corrosion management plan for pipeline.

Target Audience
Corrosion engineers, production engineers, material engineers, and reliability engineers.

DURATION/Dates
Five (5) Days May 3-9 Nov. 3-12

Course Title and Introduction

Corrosion Control in Gas, Oil and Water:

This intensive training course examines the types of corrosion and corrosion control in the gas, oil and water industry and provides an overview of specific process descriptions and focuses on the examination and identification of metallurgical problems in process units and methods of corrosion monitoring, control and damage reduction.

Course Content
- Fundamental corrosion principles and mechanisms
- Types of corrosion that are related to the oil, gas and water
- Materials of Construction for process applications
- Corrosion Monitoring and inspection Methods
- Aspects of Corrosion inspection and anti-corrosion management and mitigation

Learning Outcomes

Target Audience
Process Engineers, Inspectors and Inspection Supervisors, Equipment Engineers, Maintenance Engineers and Planners, Design Engineers, Service Company Representatives

DURATION/Dates
Five (5) Days June 7-11

Course Title and Introduction

Guidelines for Open Pit Slope Design 1 – Fundamentals and Data Collection:

This course presents an overview of the design process for open pit slopes. The course begins with a description and review of the fundamentals of slope design and then progresses from field data collection and QA/QC techniques through to the development of the individual component models that are used to define the geotechnical model. The course explores different slope design methods and considerations.

Course Content
- Fundamental of Slope Design
- Data Collection and QA/QC
- Modelling, Techniques and Calibration
- Slope Design Methods

Learning Outcomes
Fundamentals of Slope Design
Data Collection and QA/QC
Modeling, Techniques and Calibration
Slope Design Methods
Management of open pit slopes

Target Audience
Geologists, Mining and geological engineers and technicians, and any other professionals involved in the process of data collection, design, monitoring and management of open pit slope, Attendees should have a basic background in rock mechanics and experience in feasibility stage projects or operating open pit mines.

DURATION/Dates
Five (5) Days May 17-21 August 23-29

Course Title and Introduction

SURFACE FACILITY PRODUCTION OPERATIONS:

This course will provide participants with the fundamental and principles of production fluid behavior, conditioning, and processing from the wellhead to custody transfer. The participants will learn oilfield production handling at the surface, the treatment equipment, and the processes. Natural gas and oil physics characteristics, gathering system, separation, treatment, pigging, transportation, measurements, rotating equipment, vessel and piping design, and operations will all be covered to enhance operational efficiencies.

Course Content
- Production Systems, Fluid Properties and Hydrocarbon Properties
- Manifold and Gathering Systems
- Pigging and Separation
- Oil and Water treatment
- Gas Treatment, Pump and Compressors

Learning Outcomes
Participants will learn how to design and operate the surface facilities production equipment and processes through daily exercises.

Target Audience
Surface facility operation engineers, surface facility design engineers, production operation engineers, and production managers.

DURATION/Dates
Five (5) Days March 1-5 Sept. 6-10
November 1-5

Course Title and Introduction

Foundation of Petroleum Exploration and Exploitation:

Course Content
- Basic geological concepts
- Petroleum exploration
- Basic Petroleum Geology
- Drilling Technology & Equipment
- Production Technology & Equipment
- Field gathering, treatment and storage of oil and gas
- Measurement of oil & gas and reserves estimates
- Refining crude oil, refining processes for gas, kerosene, petrol, diesel, etc.

Learning Outcomes
At the end of the one-week course participants will, know the functional operations of the Petroleum Industry; differentiate between the various operating divisions of the industry, e.g. Exploration, Drilling, Exploitation, Refining.
Be acquainted with good knowledge of operational

processes of each of the divisions.
Update their knowledge on petroleum exploration and exploitation.

Target Audience
Non-technical personnel from Petroleum exploitation companies, Government agencies with duties related to oil and gas exploitation business, Journalists and gas correspondents, Non-petroleum engineers, lecturers, Instructors, Technological Assistants, field operators in the petroleum industry.

DURATION/Dates
Five (5) Days March 15-19 Sept. 6-10

Course Title and Introduction

WIRELINE (SLICKLINE) OPERATIONS & MAINTENANCE:

Course Content
- Introduction
- Well completion
- Spacing out completion string
- Surface equipment
- Wireline string
- Mandrels and Landing nipples
- Control and Maintenance tools
- Running and Pulling tools
- Special Oil and Gas well problems
- Safety in Wireline Operations.

Learning Outcomes
At the end of the course, Production Personnel should be introduced to workover operations. Know the use of wireline, tubular and wireline for well repairs.

Target Audience
Engineers and Operation Supervising Geologist, Field Technicians, Managers, Petroleum Inspectors and Wireline Operators.

DURATION/Dates
Five (5) Days March 22-26 May 3-9
October 11-15

Course Title and Introduction

Fishing, Perforating and other Slickline Operation:

The course is a practical approach to special slickline applications and detailed description of downhole tools: procedures and tools for fishing and perforating, types of landing nipples, shifting tools, plugs, circulating devices, procedures and kickover tools for installing/retrieving GLM valves and subsurface safety valves. The course is designed for personnel initiated with basic slickline knowledge, to upgrade their ability to Skills Level in operating and supervising.

Course Content
- Review of basic Slickline Tools and Operations
- Practical Review of Tools and Plugs shifting tools, Gas lift equipment, rigging up and tubing control
- Practical: Running plugs and safety valve, fishing tools, fishing tools and gas lift equipment
- Braided line and pressure equipment, fishing, SL Perforating , Downhole measurement and new developments

Learning Outcomes

Target Audience
Engineers and Operation Supervising Geologist, Field Technicians, Managers, Petroleum Inspectors and Wireline Operators. Slick line operators and supervisors, as well as other personnel involved in slickline operations (completion and well intervention engineers and supervisors)

DURATION/Dates
Five (5) Days February 8-12 October 11-15

Course Title and Introduction

INTRODUCTION TO COILED TUBING OPERATIONS:

The course overviews Coiled Tubing Equipment, Manufacturing and Applications, including operations performed with nitrogen.

Course Content
- Coiled tubing equipment and well control
- CT Logging, Fill Clean-Out and Job Design
- Tools

- Nitrogen Application

Learning Outcomes
Participants will be acquainted with coil tubing surface equipment rigging up and down same and have an effective Supervision of the job at the end of the course.

Target Audience
All Production and Petroleum Personnel

DURATION/Dates
Five (5) Days March 8-12 August 2-6

Course Title and Introduction

COILED TUBING OPERATIONS:

Course Content
- Introduction
- Coil Tubing Surface equipment
- Computation for field operation
- Downhole tools
- Coiled tubing services
- Drilling
- Testing
- Completion
- Production
- Workover

Learning Outcomes
Participants will be acquainted with coil tubing surface equipment rigging up and down same and have an effective Supervision of the job at the end of the course.

Target Audience
All Production and Petroleum Personnel

DURATION/Dates
Five (5) Days April 12-16 Sept. 6-10

Course Title and Introduction

ELEMENTS OF PETROLEUM EXPLORATION

Course Content
- Introduction to Basic Geology
- Exploration Methods
- Principles of Seismic Exploration
- Origin of Petroleum/Petroleum Geology
- Basic Structural Geology
- Formation Evaluation
- Sedimentology & Stratigraphy

Learning Outcomes
To expose the participants to the fundamental operations in the Petroleum Industry

Target Audience
Non-technical staff from the public and private sectors.

DURATION/Dates
Five (5) Days March 8-12 June 14-18
November 22-26

Course Title and Introduction

TERMINAL OPERATIONS FOR CRUDE OIL EXPORT:

- Course Content
- The Nigerian crude oil export market and procedures.
- Crude oil marketing in Nigeria, development, trends and prospects.
- Petroleum product knowledge, sampling and analysis techniques.
- The characteristics of Nigeria's Crude Oil.
- Terminal operations storage and measurement techniques.
- Crude oil terminal operations, Records/Documentation, Reporting Techniques and Procedures.
- Meter proofing
- Safety and fire fighting in terminal operations.
- Crude oil pipeline and Marine Transportation.
- The Law of contract and the sale of goods Acts.
- Petroleum Marketing Laws and Regulations in Nigeria.
- Communication skills, techniques and Methods of effective Terminal export operations.
- Basic Management concepts and Techniques for effective Terminal operations for Crude Oil Export.

Learning Outcomes
On completing this course, participants would appreciate, update and improve upon their knowledge, skills and abilities in the various Terminal Operations for Crude oil export.

Target Audience
Crude oil marketers, Depot supervisors and Managers, Crude Oil Marketing Terminal/Depot, Task Force Officials, Crude Oil exporters and their representatives.

DURATION/Dates
Five (5) Days March 1-5 June 14-19
November 1-5

Course Title and Introduction

CRUDE OIL CUSTODY TRANSFER OPERATIONS:

Course Content
- Crude oil chemical and physical properties
- Static measurement of crude oil
- Fiscalisation of crude oil storage tanks.
- Positive Displacement Meter/Lact Units
- Dynamic Flow Method of Crude Oil Measurements
- Automatic Sampling Device
- Crude Oil Gauging and Sampling Methods
- DPR Procedure guide for static measurement of crude oil volumes by tank gauging.
- Test and Analysis of crude oil.
- Types of Storage tanks.

Learning Outcomes
On completing this course, participants would appreciate, update and improve upon their knowledge, skills and abilities in the various Terminal Operations for Crude oil export.

Target Audience
Crude oil marketers, Depot supervisors and Managers, Crude Oil Marketing Terminal/Depot, Task Force Officials, Crude Oil exporters and their representatives.

DURATION/Dates
Five (5) Days March 1-5 June 14-18
November 1-5

Course Title and Introduction

BASIC RESERVOIR ENGINEERING:

Course Content
- Reservoir fluid properties
- Reservoir rock properties
- Fundamental of fluid flow
- Reservoir classification
- Reservoir Drive Mechanism
- Well performance
- Oil Displacement concept
- Reserve estimation etc.

Learning Outcomes
To help the participants to develop a more complete understanding of the Oil and Gas reservoir characteristics. At the end of the course the participants would understand fluid and rock properties, development plan, classification, drive mechanism and production of the reservoir. All these would help the participants to take or make useful decision/suggestions in reservoir development.

Target Audience
Geologists, geophysicists, engineers, engineering trainees, production personnel, technical managers, technical assistants, technicians, chemists, physicists, technical supervisors, service company personnel, sales representatives, Data processing personnel and supporting staff whose work has to do with reservoir.

DURATION/Dates
Five (5) Days March 8-12 April 19-23
September 6-10

Course Title and Introduction

BASIC WELL TESTING:

Course Content
- conditions in respect of well testing
- Different types of Sub-surface well testing.
- Analysis of results.
- Field Importance of Well Testing
- Surface Well Testing
- Reservoir application of the results.

Learning Outcomes
To give the participants a sound theoretical background in well testing. At the end of the course, the participant would appreciate the field operations.

Learning Outcomes

To give the participants a sound theoretical background in well testing. At the end of the course, the participant would appreciate the field operations.

DURATION/Dates

Five (5) Days February 15-19 June 14-18
October 21-25

Course Title and Introduction

CRUDE OIL TREATMENT TECHNIQUES IN THE OIL AND GAS INDUSTRY:

- Course Content
- Introduction.
- Chemistry of Crude Oil.
- Crude Oil Flow Station Circuit.
- Characterization of Crude Oil.
- Crude Oil Emulsions
- Treatment Methods
- Thermal Treatment
- Chemical Treatment, etc

Learning Outcomes

At the end of the Course, Participants will be able to understand Crude Oil Impurities and their Effects, Flow Station Circuits, and become knowledgeable in all methods of Crude Oil Treatment Techniques

Target Audience

Production Engineers, Field Chemists, Field Supervisors, Technologists, Technicians, Gaugers, e.t.c

DURATION/Dates

Five (5) Days June 14-18 Oct. 4-8

Course Title and Introduction

DRILLING FLUID TECHNOLOGY- THEORY AND PRACTICE:

Course Content

- Introduction
- Clay And Clay Chemistry
- Drilling Fluid Classification and Preparation.
- Fundamental Characteristics of Drilling Fluid.
- Drilling Fluid Testing Procedures, Equipment and Parameters
- Drilling Fluid Contaminants And Additives
- Drilling Fluid Conditioning Techniques (mud Treatment)
- Mud Problem Identification And Solving

Learning Outcomes

At the end of this Course, Participants will be able to understand the Basic Techniques used in Characterizing and Preparing Drilling Mud and be able to identify Various Mud Contaminants and the Additives Suitable for Mud Treatment.

Target Audience

Mud Engineers, Mug Loggers, Technologists, Technicians, etc

DURATION/Dates

Five (5) Days March 22-26 June 7-11

Course Title and Introduction

WELL CONTROL:

- Course Content
- General Information
- Pressure Concepts
- Causes of kick and kick indicators
- Kill Methods
- BOP equipment hook up and test procedures
- Well control from a floating vessel
- Stripping and Snubbing
- Gas kicks and Regulations

Learning Outcomes

At the end of the course, the participants should be able to appreciate the importance of pressures control in drilling, recognize kicks and their warning signals, rigging up and testing of well control equipment, know the rig personnel in well control and pass the qualifying well control examination.

Target Audience

Rig Senior personnel, Drillers and assistant, Rig personnel; Rig services personnel, Mud engineers, Mud Loggers, ADT, etc.

DURATION/Dates

Five (5) Days March 1-5 June 14-18
September 21-25

Course Title and Introduction

BASIC WELL COMPLETION:

- Course Content
- Introduction
- Completion types configuration
- Completion Tubular
- Subsurface completion equipment's
- Spacing out completion strings
- Basic work over Operations

Learning Outcomes
At the end of the course, the participants should be able to identify completion configurations, know the factors considered in well completion, know spacing out completion tubular, identify completions equipment's and knowing basic work over operations.

Target Audience
Petroleum Engineers, Completion Personnel, Production & Workover technologist & Technicians, Well Head Services Personnel, Oil & Gas Policy makers, etc.

DURATION/Dates
Five (5) Days February 15-19 June 14-18
October 12-16

Course Title and Introduction

SEISMIC DATA ACQUISITION, DATA REDUCTION AND QUALITY CONTROL:

Course Content
- Introduction.
- Data Acquisition Survey Design.
- Acoustic Impedance and Reflectivity.
- Common Dip Point (CDP) Stacking, Normal Movement (NMO) Correction.
- Data Acquisition Operations and Survey Design Principles.
- Computer Application.

Learning Outcomes
At the end of the Course, Participants will be able to execute 2D, 3D, 4D Seismic Survey and access the Quality of Field Data.

Target Audience
Geologists, Geophysicists, Engineers, Supervisors, Executives and Managers, etc.

DURATION/Dates
Five (5) Days April 19-23 Sept. 6-10

Course Title and Introduction

BASIC FORMATION EVALUATION:

Course Content
- Introduction
- Principles of Well Logging for Reservoir Exploration.
- The Borehole and its environment
- Logging Methods (Physical Principles, Petrophysical Background)
- Interpretation

Learning Outcomes
At the end of the Course, Participants will be able to understand the Basic Principles of Wireline Logging, its Operation and Interpretation in Evaluating Reservoirs.

Target Audience
Managers, Executives, Engineers, Geoscientists, etc. with little or no background in Formation Evaluation.

DURATION/Dates
Five (5) Days February 15-19 July 5-9

Course Title and Introduction

BEST PRACTICES OF ENHANCED OIL RECOVERY (EOR) PROJECTS:

The training course is designed to provide attendants with solid understanding of different design aspects, types, screening criteria, and field application of current and advanced types of Enhanced oil Recovery (EOR) processes. Today, it is better to apply EOR in a secondary mode. This training course presents basics, applications, problems, uncertainties and field development of each EOR method.

Reservoir characterization techniques required for EOR will be explained and compared. Detailed EOR methods will be covered with many actual field cases worldwide will be presented and discussed. The course is designed as an interactive learning environment of lecturing, industry videos, and screening field cases.

Course Content

- Rock and fluid properties for better reservoir characterization
- How to screen actual reservoir to select the suitable EOR method
- Different types, sub-types, and results of EOR field cases (chemical, miscible, and thermal)
- Required data, lab design approach, and analysis of different EOR methods
- Current industry simulators and new advancements of EOR methods

Learning Outcomes

- Describe and apply different EOR processes
- Reservoir characterization and screening actual fields for EOR methods
- How to maximize oil recovery using Mobility Ratio and Capillary Number
- Chemical EOR: polymer, alkaline-polymer, and alkaline/surfactant/polymer
- Miscible and thermal EOR techniques and new advancements in EOR techniques

Target Audience

Petroleum, Production & Reservoir Engineers, Processing engineers & other discipline engineers, Geologists & Petro-physicists, Engineers who are new to the profession, Other individuals who need to know about EOR technologies

DURATION/Dates

Five (5) Days March 8-12 August 23-29

Course Title and Introduction

APPLIED CORING AND WELL LOGGING FOR ENHANCED RESERVOIR CHARACTERIZATION:

This unique training course is designed to provide deep understanding of core analysis and well logging for better reservoir characterization. Accurate measurements of routine and special (RCAL & SCAL) rock properties using core analysis and well logging reveal good evidence of hydrocarbon presence, reservoir storage capacity and flow capability. Coring and well logging offer the most tangible and direct means of determining critical reservoir parameters for making important and critical decisions about reservoir management and/or development plus enhanced oil recovery projects.

Course Content

- Design of coring program and coring protocol
- Routine and Special Core Analyses (RCAL & SCAL)
- Laboratory measurements of different rock properties
- Well logging methods, interpretations, and applications
- Rock properties from well logging for clean and shaly formation
- Integration of various data for better identification of reservoir flow units

Learning Outcomes

- Design good coring program and minimize rock alteration
- Determine rock properties using routine and special core analyses
- Interpret, and apply different logging methods for clean and shale reservoirs
- Integrate/correlate core and log data for well correlations
- Apply different techniques for identification/characterization of flow units.

Target Audience

Petroleum Engineers & Reservoir Engineers, Geologists, Petrophysicists, and Geophysicists, Geological engineers & other discipline engineers, Engineers who are new to the profession and other individuals who need to know about current & advanced techniques of in reservoir characterization

DURATION/Dates

Five (5) Days March 15-19 October 11-15

Course Title and Introduction

ELEMENTS OF LAND SURVEYING:

- Course Content
- Introduction.
- Surveying Equipment.

- Surveying Techniques
- Computation
- Field Practice
- Safety.

Learning Outcomes
At the end of the Course, Participants will be able to understand the Basic Principles of Land Surveying, Process and Compute Survey Data.

Target Audience
Construction Site Managers, Engineers, Geologists, Explorationists, Survey Assistants, etc.

DURATION/Dates
Five (5) Days April 19-23 October 4-8

Course Title and Introduction

ELEMENTS OF OPEN-CAST MINING OPERATIONS:
- Course Content
- Introduction.
- Basic Elements of Excavation.
- Open Cast Excavation Tools/Equipment.
- Basic Fragmentation Techniques
- Mucking.
- Beneficiation Techniques.
- Ore Reserve Estimate.
- Safety.

Learning Outcomes
At the end of the Course, Participants will be able to understand Basic techniques in Open Cast Excavation.

Target Audience
Managers and site construction Engineers, Supervisors, Field Operators, Foremen, Drillers, Drilling Assistants, Pickers, etc.

DURATION/Dates
Five (5) Days May 3-7 October 11-15

Course Title and Introduction

EXPLOSIVES AND ITS ENVIRONMENTAL EFFECTS:

- Course Content
- Introduction.
- Chemistry of Explosive.
- Principles of Rock Fragmentation.
- Storage and Transportation.
- Environmental Effects.
- Safety.

Learning Outcomes
At the end of the Course, Participants will be able to understand Basic Principles of Explosives and manage Explosives, Fragmentation and its Effect on the Environment.

Target Audience
Quarry Manage
rs, Engineers, Supervisors, Foremen, Blasters, Safety Officers, Drillers and Pickers, etc.

DURATION/Dates
Five (5) Days March 8-12 August 2-6

Course Title and Introduction

DRILLING TECHNOLOGY:

- **Course Content**
- Origin of Petroleum/Reservoir Traps
- Exploration Methods
- Basic Formation Evaluation
- Casing & Cementation
- Workover Operations
- Principles of Hole-making
- Introduction to Well Control

Learning Outcomes
At the end of the course, participants should be able to understand the basic principles of hole making, solving encountered hole problems, Well Control & Workover operations

Target Audience
Technical Personnel (Drillers & Assistant Drillers), Rig Supervisors, Floor men, Workover Technologists/Technicians, Oil & Gas Policy Makers

DURATION/Dates
Five (5) Days February 22=26 June 7-11
August 16-20

Course Title and Introduction

MUD SCHOOL –PTI LEARNING CENTRE:

The core content of this course will cover all the main pillars of drilling fluids activities linked to drilling and completion operations, with safety best practices being a primary focus throughout the course.

This course will be articulated around detailed theoretical knowledge for drilling fluids (both WBM and OBM) and completion fluids, followed by hands on practical experiments in a dedicated laboratory environment.

Course Content

- School Induction and Drilling Fluid Functions
- Basic Chemistry of Drilling Fluids
- Clay Chemistry and Composition
- Polymers and Their Function
- Rheology
- Standard Mud Tests with Lab Session
- Composition of Water Based Drilling Fluids with Lab Session
- Water Based Systems and Additives
- High Performance and HPHT Water Based Muds with Lab Session
- Filtration Control with Lab Session
- Mud Contamination and Treatment with Lab Session
- Lost Circulation with Lab Session – Basic Mud Check
- Corrosion
- Solid Analysis with Lab Session
- Safety Data Sheets (SDS or MSDS) with Lab Session
- Oil and Synthetic Based Mud Products and Systems
- Standard Mud Tests for OBM/SBM
- Lab Session – Conventional and Synthetic Muds
- Lab Sessions – Oil Systems with Relaxed or High Filterate and Megadril – All-in-one Emulsifier Package
- HPHT Challenges, Applications and Systems
- Solid Control Equipment and Drilling Waste Management
- Solid Control and Drilling Waste Management with Lab Session
- Lab Sessions: Build Bentonitic Mud System and Build a Polymer Mud System
- Stuck Pipe Problems
- Lab Session Methylen Blue test and Effect of Solids Content on Mud properties
- Hole Cleaning and Lab Session for WBM Problems
- Reservoir Drill-in Fluids and Completion Fluids
- Well Clean Up and Displacement Procedures
- Lab Session – Final Lab Session – Treat contaminated Mud System.

Target Audience

Drilling Engineers, Drilling Supervisors, Production Engineers, Drilling Fluids Supervisor and Drilling Fluids Superintendent.

DURATION/Dates

Twenty (21) Days	May 17- June 9
	November 1-24

Petroleum Analysis Laboratory (PAL)

Petroleum Analysis Laboratory (PAL)

Course Title and Introduction

PRACTICAL TRAINING IN CRUDE OIL ANALYSIS:
A practical training course in Crude Oil Analysis covers the characterization of Crude oil product for the purpose of quality determination. The crude oil analysis classifies the crude product as sweet or sour and whether it is heavy, medium and light. It determines its market value base on estimate product yields during refining.

Course Content
- Introduction to formation chemistry of crude
- Density, Specific gravity and API gravity (Hydrometer Method ASTM D1298)
- Water and Sediment in Crude oil (centrifugal method ASTM D4007)
- Water in crude oil by distillation (Dean & Stark Method ASTM D4006)
- Pour Point of petroleum oils (ASTM D97)
- Vapour pressure of petroleum products (Reid Method ASTM D4323)
- Flash point by pensky-martens closed tester (ASTM D93)
- Salt in crude oil (Electrometric Method ASTM D3230)
- Sulphur content (ASTM D1551)
- Metal content in crude (ASTM D2788)

Learning Outcomes -
- Idenotify the equipment used in the determination of the parameters shown in the course outline
- Describe the processes involved in determining each of the parameters
- Identify the standard methods (e.g. ASTM, IP etc) determination for each of the parameters
- Carry out the determination of each of the parameters
- Identify relevant standards/specifications for quality definition f the parameters

DURATION/Dates

5 days	April 19-23	August 23-27

Course Title and Introduction

PRACTICAL TRAINING IN PETROLEUM PRODUCTS ANALYSIS:
A practical training course in Petroleum Products Analysis identifies key performance as well as safety parameters as quality indicators of the products. Quality of the is imperative for effective use, storage and custody transfer as well as in setting government regulation for products control and monitoring.

Course Content
Introduction to petroleum products classification and their chemistry.
Density, Specific gravity and API gravity (Hydrometer Method ASTM D1298)
Water in Petroleum products by distillation (Dean & Stark Method ASTM D95)
Pour Point of petroleum oils (ASTM D97)
Vapour pressure of petroleum products (Reid Method ASTM D323)
Flash point by pensky-martens closed tester (ASTM D93)
Aniline point (ASTM D611)
Smoke point Kerosene (ASTM D1322)
Kinematic viscosity (ASTM D445)
Conradsoncarbon residue (ASTM D189)
Total Acid number (ASTM D664)
Cetane Number (ASTM D976)
Copper corrosion (ASTM D130)
Metal content in crude (ASTM D2788)

Target Audience
Petroleum analysts, Scientist, Petroleum refining officers, Laboratory Managers, Quality control officers in Petroleum Laboratory, Petroleum marketers, Chemists, Oil regulators and Law enforcement officers

DURATION/Dates

5 days	May 3-7	October 25-29

Course Title and Introduction

PRACTICAL TRAINING IN POTABLE EFFLUENT WATER ANALYSIS:

The course Identifies specific equipment and or method used to determine the certain parameters in potable and wastewater from industrial discharges. The values are used to match against standard specification values issued by regulators. It is very paramount for healthy living, safe and sustainable environment.

Course Content
The following parameters will be determined:
- pH and conductivity
- Turbidity
- Total suspended solids and total dissolved solids
- Alkalinity
- Hardness as carbonate and bicarbonate
- Chloride
- Nitrates
- Oil and grease
- DO
- Chemical oxygen demand (COD)
- Metal content
- TPH
- BTEX
- PAH
- Coliform bacteria
- BOD

Learning Outcomes -
- Identify relevant parameters that determine the quality of potable as well as effluent water
- Determine the parameters spelt out in the course outline
- Identify and use the appropriate equipment and methods needed for each test
- Ascertain the quality of both potable and effluent through comparison with standard Values (WHO, DPR etc)

Target Audience
Scientists, Technologists, Water plant operators, Environmentalists, Water engineers, Laboratory regulators, Chemical analysts, Quality control officers and Managers in tertiary institutions, Research centers, industries as well as private sectors

DURATION/Dates

5 days	March 15-19	Sept. 20-24

Course Title and Introduction

QUALITY ASSURANCE AND QUALITY CONTROL FOR ANALYTICAL LABORATORY:

A training course in Quality Assurance and Quality Control prepares Analytical Laboratory and personnel to be highly meticulous in job planning, execution, validating, review and documentation. Known QA/QC measures instituted in work programmes assures confidence for acceptability of result or products administered to the public.

Course Content
Selecting and validation of analytical methods and standard operating procedures
Traceability procedure
Key performance criteria in quality assurance procedure
Components of good quality control program
Quality control and proficient testing program
System suitability and specification
Quality standard and regulation
VAM Principles
Accreditation requirement

Learning Outcomes
- Develop quality assurance manual and design implementation and management program
- Design and implement quality assurance record requirements
- Prepare laboratory for ISO 17025 accreditation
- Identify relevant components of standard operating procedure and develop additional SOPs
- Conduct an effective internal laboratory audit and inspection

Target Audience
Scientists, Technologists, Laboratory auditors, Laboratory regulators, Chemical analysts, Quality control officers and Managers in tertiary institutions, research centers, industries as well as private sectors

DURATION/Dates

5 days	April 19-23	November 15-19

Course Title and Introduction

INSTRUMENTATION, APPLICATION, USE AND MAINTENANCE OF ATOMIC ABSORPTION SPECTROPHOTOMETER (AAS):

Atomic Absorption Spectrometer (AAS) is the best technology for metal determination from all samples ranging crude, water, soil limestone etc. The course highlights sample preparation methods like dry and wet.

Course Content -

- Basic and advanced concept of Atomic Absorption Spectrophotometer.
- Components of Atomic Absorption Spectrophotometer.
- Principle and operation of Atomic Absorption Spectrophotometer.
- Preparation of Standard, Calibration and Data interpretation
- Sample collection, storage and preparation
- Application of Atomic Absorption Spectrophotometer.
- Troubleshooting and maintenance of Atomic Absorption Spectrophotometer.

Learning Outcomes

- Explain the science of atomicity
- Identify the various components of AAS
- Describe the working principle and operation of the instrument
- Prepare working standards and calibrate AAS
- Prepare all forms of samples for metal analysis using AAS
- Determine metal using AAS
- List various areas of application of AAS
- Carry out basic care and maintenance of AAS

Target Audience

Scientists, Technologists, Chemical analysts, Quality control officers and Managers in tertiary institutions, research centres, industries as well as private sectors

DURATION/Dates

5 days June 14-18 October 4-8

Course Title and Introduction

INSTRUMENTATION, APPLICATION, USE AND MAINTENANCE OF HIGH PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC):

High Performance Liquid Chromatography (HPLC) is one of the latest technologies for assay and fingerprinting of organic sample. A good separation and detection methods employed in the industry.

Course Content

- Basic concept of HPLC technique.
- Methods of analysis
- Application of HPLC.
- Troubleshooting and maintenance of HPLC
- Methods of sample preparation
- Different methods of clean-up for HPLC
- Preparation methods of standards for HPLC.
- Column efficiency performance test
- Installation methods for HPLC.
- Operational techniques for HPLC

Learning Outcomes

- Explain the process of chromatographic and other separation methods
- Identify the various components of HPLC
- Describe the working principle and operation of the instrument
- Prepare working standards and calibrate HPLC
- Prepare all forms of samples for analysis using HPLC
- Determine and estimate sample using HPLC
- List various areas of application of HPLC
- Carry out basic care and maintenance of HPLC

Target Audience

Scientists, Technologists, Chemical analysts, Quality control officers and Managers in tertiary institutions, research centers, industries as well as private sectors

DURATION/Dates

5 days March 22-26 August 23-27

ELECTRICAL ELECTRONICS INSTRUMENTATION MAINTENANCE & TELECOMMUNICATIONS PROGRAMES

Electrical Electronics Instrumentation Maintenance & Telecommunications Programes

Course Title and Introduction

FOUNDATION OF FIELDBUS SYSTEM:

This course is geared towards exposing the trainees to the working of a Foundation Fieldbus System and the use as a bi-directional communications protocol used for communications among field devices and to the control system in the oil and gas industry.

Course Content

- General Introduction to Foundation Fieldbus System.
- How Foundation Fieldbus is shifting the process of control strategy paradigm
- Advantages of using the Foundation Fieldbus Technology
- Foundation HSE Communication Methods
- Power Supply Termination
- Intrinsically Safe Fieldbus

Learning Outcomes

- Understand a Fieldbus system
- Understand Common Fieldbus Configurations
- Understand Multi Master Redundancy and Device Type Manager (DTM)

Target Audience

Instrument engineers, technologists and technicians. For electrical engineers, technologist, technicians, and instrument operators who are working in oil establishment

DURATION/Dates

3 days May 6-8 Sept 2-4

Course Title and Introduction

PROCESS CONTROL SYSTEMS AND LOOP TUNING:

The main aim of this Process Control, Loop Tuning and Advanced Control Strategies course is to help trainees understand the technical concepts. This will enhance their skills with practical experience. This course will help trainees acquire knowledge on process control engineering concepts with lots of practical and computer aided problems for the better understanding

Course Content

- Introduction to Process Control
- Time Response
- Transfer and Function
- Open Control System
- Closed Control Systems
- Stability of Closed Loops
- PID Control
- Transducers and Sensors
- Measurements and Sensors
- Idea ID Vs Real PID
- Cascade Control

Learning Outcomes

- Understand process control requirements
- Manage open and closed process systems
- Differentiate between Idea PID and Real PID
- Understand process measurements

Target Audience

Instrument engineers, technologists and technicians. For electrical engineers, technologist, technicians, and instrument operators who are working in oil establishment

DURATION/Dates

3 days May 6-8 Oct 7-9

Course Title and Introduction

INSTRUMENT MAINTENANCE, REPAIR AND CALIBRATION:

This course is designed to update participant's knowledge and skill in maintenance and troubleshooting of electronic and process instruments

Course Content
- Types of maintenance operations
- organization of maintenance
- Maintenance management
- Maintenance management options
- Maintenance planning and control
- Shop tools and accessories
- Test equipment and standards
- Electronic instruments/equipment maintenance and repairs
- Calibration of process instruments and stroking of control valves
- Troubleshooting skills in instruments
- Troubleshooting approaches
- Maintenance of Laboratory instrument
- Maintenance of Process Instruments (Control Valve, Transmitters, Regulators E.T.C.)
- Troubleshooting scenarios

Learning Outcomes
- Understand maintenance and troubleshooting of electronic process equipment

Target Audience
Instrument engineers, technologists and technicians. For electrical engineers, technologist, technicians, and instrument operators who are working in oil establishment

DURATION/Dates
4 days April 1-4 Sept 16-19

Course Title and Introduction

Electrical machines maintenance:
This course is designed to provide participants with current and up-to-date knowledge of the working principles of Electrical Machines.

Course Content
- Basic Principles:
- Conductor in magnetic field
- Generated E.M.F. flux linkage induce E.M.F
- Torque and output power
- Electromagnetic induction
- Tum/Voltage ratios
- Load Condition.
- Electrical Equipment Classification
- Electrical Equipment Operation
- Electrical Equipment Application

Target Audience
For Electrical/Mechanical Technicians Working in the Oil/Manufacturing Industries with appropriate background and working experience.

DURATION/Dates
3 Days March 4-6 May 6-8
October 21-23

Course Title and Introduction

ELECTRICAL MAINTENANCE MANAGEMENT:

This course is designed for those with the responsibility of maintaining reliability and availability of electrical equipment in the organization. Participants will be exposed to practical current practices/principles in electrical maintenance management

Course Content
- of maintenance.
- General objectives of maintenance.
- Maintenance operations
- Maintenance procedure.
- The need for a maintenance department.
- Functions of a maintenance department.
- Organogram of maintenance.
- Maintenance Supervision.
- Various types of maintenance activities.
- Effective factors necessary for the selection of a
- maintenance practice (policy).
- The need to prepare maintenance schedule and programme for maintenance work.
- The need for proper record keeping of maintenance work done.
- The need to prepare ordering schedule for replacing and replenishing of materials and tools.
- Distinction between maintenance and repairs.
- Maintainability and its importance.
- Identification of test instruments and equipment for different tests: -
- Insulation resistance test.
- Dielectric strength test.
- Murray loop test.
- The need to observe safety precautions during testing and

- repairs.
- The need for specification, regulations and standards as maintenance tools.
- Method of carrying out the required test, repairs and maintenance on: -
  (I) Electrical machines.
  (ii) Transformer.
  (iii) Industrial equipment. e.g. compressors, pumps etc.
  (iv) Audio and Video systems.
  (v) Domestic appliances.
- Electrical Installation repairs and maintenance.
- Commissioning

Learning Outcomes
- Understand general objective of electrical maintenance
- Understand the principles of maintenance management
- Understand the principles of record keeping and stocktaking.
- Understand the use of test instruments and equipment.

Target Audience
Electrical Engineers, Technologists, Technicians, Mechanical Technicians and Technologists involved in the maintenance of Electrical Systems Equipment and devices.

DURATION/Dates
3 Days June 3-5 October 14-16

Course Title and Introduction

ELECTRICAL RISK PREVENTION:
To provide participants with the skills and knowledge to prevent electrical risks

Course Content
- Concept of electricity
- Classification of electrical materials
- Direct current
- Alternating current
- 23
- Electrical faults
- Protection measures for safety
- Protection against electric shock
- Protection against thermal effect of electric current
- Testing and Inspection of electrical installation and
- equipment
- Importance of Earthing Test

Learning Outcomes
- Know fundamentals of electrical risk prevention
- Know basic safety requirement
- Understand protective measures for safety
- Know Regulations and Standards guiding electrical installation and equipment.

Target Audience
Maintenance and Safety Personnel, Electromechanical Personnel and individual that has priority for safety measures as it affects electrical installation and sets of equipment.

DURATION/Dates
3 Days June 24-26 October 7-9

Course Title and Introduction

SWITCHGEAR MAINTENANCE:

When switchgear malfunctions, the consequences are often catastrophic. Damage to the switchgear itself can be extremely expensive, but that pales in comparison to corollary damage and the potential hazards to people. Thus, implementing an effective switchgear testing, inspection, and maintenance program is essential. This training course is designed to provide participants skills to address these needs in an organization

Course Content
- Electrical hazards and precautions
- Statutory regulations and codes of practice
- High voltage safety rules
- Electrical safety documents
- Operational features of switchgear
- Circuit breakers – oil, gas, air and vacuum
- Auxiliary equipment
- Primary conductors and switchgear enclosures
- Switchgear maintenance
- Battery supply units
- Introduction to electrical faults and protection
- Fault diagnosis

Learning Outcomes
Understand the functional and operational requirements of HV/LV electrical switchgear

Target Audience
Electrical and mechanical personnel with a responsibility for the maintenance of HV/LV electrical switchgear

DURATION/Dates
3 Days April 8-10 November 4-6

Course Title and Introduction

REWINDING OF ELECTRICAL MACHINES:

This training is designed to provide knowledge and skills in the trade to meet the standard performance of industry. Participants will be introduced to the various electric machines with reference to motors, alternators and transformers enabling them undertake repairs of electric machines particularly motors.

Course Content
- Introduction
- Classification of electric motors
- Types of electric motor windings
- Identification of burnt electric motors
- Dismantling of motors
- Measurement of conductors diameters
- Preparation of slots and coils
- Rewinding process
- Binding the windings
- Terminations
- Tests
- Vanishing.

Learning Outcomes
At the end of the course the participant should be able to identify and rewind burnt electric motors

Target Audience
For electrical engineers and technicians in oil and manufacturing industries,

DURATION/Dates
3 Days May 20-22

Course Title and Introduction

ELECTRICAL INSTALLATION AND MAINTENANCE:

This training begins with the fundamental principles that always apply to ensure safety and provides participants with the knowledge and ability to install, alter, repair and maintain all types of electrical systems. It also covers the principles of hazardous area classification, explosion –protection techniques, equipment installation requirements, inspections, procedures for breakdown and maintenance with theory and practical components.

Course Content
- Safety and safety regulations.
- Electrical working diagrams.
- Domestic Surface Wiring Techniques.
- Domestic Conduit Wiring.
- Protecting Electrical Devices.
- Testing of Domestic Installations.
- Ducts and Trunkings.
- 24
- Types Of Cables, Sizes and Selection.
- Electrical Machines And Equipment Installation And
- Control Methods.
- Simple Maintenance Methods.

Learning Outcomes
- Understand electrical working diagrams.
- Know different types of domestic surface wiring.
- Know different types of domestic conduit wiring.
- Understand the principles of protecting electrical devices
- and install them.
- Understand sequence for inspecting and testing domestic
- installations.

Target Audience
Technicians, Maintenance Personnel and Workshop Personnel and Their Assistants.

DURATION/Dates
5 Days May 13-17 September 23-27

Course Title and Introduction

FLOW MEASUREMENT:

To provide a working knowledge of procedure for flow measurement.

Course Content
- Physical Fluid Properties:
- Definition
- Fundamentals of Fluid Mechanics
- Flow Pattern
- Velocity of Flow equipment
- Flow Measurement Techniques
- Calibration of Flow Meters
- Economics of Flow Measurement

Learning Outcomes
- e aware of the principles and key features of the main types of metering systems in use within the natural gas industry
- Understand the principles and practice of volume conversion
- Understand the importance of correct calibration
- Understand the principles of current maintenance and validation requirements
- Appreciate the importance of flow calibration
- Appreciate the impact of metering errors

Target Audience
Technicians/Operators involved in flow measurements in Petroleum/Allied Industries.

PRICE: N150,000

DURATION/Dates
3 Days March 4-6 August 26-28
October 7-8

Course Title and Introduction

FUNDAMENTAL OF ELECTRONICS/APPLICATIONS:

That at the end of this course,
participants would have thorough working knowledge of electronics including analogue and basic digital electronics. operational amps and application of power electronics in industrial drives

Course Content
- Circuit Components
- D.C Electronics
- A.C. Electronics
- Trouble Shooting of Digital Circuits
-

Learning Outcomes
- Understand electronic applications

Target Audience
Engineers, Technologist and Technicians in the Industries. Instructors, Technologists and Technicians in academic and research institutes.

DURATION/Dates
3 Days June 17-19 October 21-23

Course Title and Introduction

DIGITAL ELECTRONICS AND LOGICS:

Digital Electronics is one of the branches of Electronics. It deals with digital format of data and codes. Digital techniques are very useful because it is easier to get an electronic device to switch into one of a number of known states than accurately reproduce a continuous range of values. This course teaches concepts to participants, who can develop a solid underlying knowledge of digital electronics.

Course Content
- Introduction to Electronics: – Electric Current, OHMS Law, Insulation, Conduction and related Formulae. Resistor colour codes.
- Practical study of Digital I.C.s including AND, NAND, OR, NOR, X-OR, X-NOR, Inverter, Buffer, SR Latches and D-Latches and Flip-Flops.
- Oscillators, Multivibrators and 555 Timers. Switches and Switch De-bounce circuits and their applications.
- Numbering systems, TTL and CMOS technologies
- Counters, Counter Decoding Circuitry, Shift Registers
- A-D and D-A converters
- Digital Displays: – LED and LCD, numeric and alphanumeric, operating currents, voltages and power requirements. Display decoders and drivers.
- Test Equipment: – Practical use of Analogue and Digital Multimeters, Oscilloscopes, Logic probes, Logic Pulsers, etc.

- Fault-finding techniques: – Diagnosing and rectifying faults on circuits built during course.
- Health & Safety, Care of Tools and instruments for assembly and repair

Learning Outcomes
- Build and fault-finding a range of Digital Electronic circuits used in computers and computer controlled equipment
- Use test equipment including Multimeters, Oscilloscopes, logic probes and pulsers to implement systematic fault-finding techniques.
- Study and use of popular Digital Electronic gates and more advanced circuits

Target Audience
New developers who are interested to learn digital electronics, students or professionals who are interested in the area of Digital Electronics and anyone wants to have good knowledge in Digital Electronics and Logics.

DURATION/Dates
4 Days May 6-9 November 11-14

Course Title and Introduction

INSTRUMENTATION (PNEUMATICS) - FUNDAMENTALS:
This course provides maintenance personnel and production operators etc with fundamental skills and knowledge necessary to carry out maintenance tasks on pneumatic and electro-pneumatic systems.

Course Content
- Definition pneumatic instrumentation
- Explain the development and needs for pneumatics
- instrumentation
- List the equipment and devices needed for pneumatic
- measurements and control system
- Explain the construction and operations Nozzle flapper devices

Learning Outcomes
- Define Instrumentation, classify instruments, list examples of instruments scales and types of instrument errors.
- Know the process variables and various methods of measuring process variables
- Know how to convert mechanical, electrical and electronic signals into pneumatic signals and vice-versa
- Compare Pneumatic transmissions with mechanical, electrical and electronic transmission over other type of transmissions
- Describe components of connections for pneumatic signals

Target Audience
For Instrument Engineers, technologists and technicians. For Electrical Engineers, technologists, technicians, instrument operators who are working in oil establishment.

DURATION/Dates
5 Days March 18-22 July 1-5
October 14-18

Course Title and Introduction

INSTRUMENTATION (PNEUMATICS) - ADVANCED:

This advanced training course provides with the skills and knowledge necessary to carry out maintenance tasks on pneumatic systems.

Course Content
- Describes the construction and operations of pneumatics relays
- such as non –bleed and continuous bleeding relay
- Describe the construction of force balance and motion balance
- mechanisms respectively. Giving practical example of each and their application
- Describe the construction and operation of:
  (i) pneumatic proportional controller
  (ii) pneumatic differentiator
  (iii) pneumatic integrators and pneumatic proportion
- plus integral controller and finally pneumatic PID
- controllers
- Pneumatic current – to – Air Converter
- Differential Pressure Transmitters Force Balance
- Pneumatic controllers, state types, principle and application
- Describe the operation of the manual Auto Transfer Switch
- Pneumatic recorders, construction, types and application

- Pneumatic valves and actuators
- Pneumatic valve positioners
- Electro Pneumatic valve positioners
- Pneumatic telemetry

Learning Outcomes
- Describe the construction details and general features of pneumatics connections
- Describe pneumatic control elements; understand the operating principles of pneumatic control valves.
- Describe the operating principles of pneumatic controllers
- Describe pneumatic relays, pressure reducers' boosters and transmitters.
- Know how to calibrate pneumatics instruments.

Target Audience
For Instrument Engineers, technologists and technicians. For Electrical Engineers, technologists, technicians, instrument operators who are working in oil establishment.

DURATION/Dates
3 Days March 25-27 July 8-10
Oct 21-23

Course Title and Introduction

BASIC INSTRUMENTATION AND CONTROL:

This foundation-level course provides an overview of electrical systems, instrumentation, process control, and control/safety systems typically encountered in oil and gas facilities, such as: separation, gas dehydration, gas sweetening, NGL recovery, and associated facilities. The focus is to understand terminology, concepts, typical equipment configurations, control strategies, and common pitfalls in order to effectively manage and execute multidiscipline projects.

Course Content
Introduction and interpretation of Instrumentation
- Pressure and Temperature
- Electrical Temperature Measurement
- Level Measurement

Learning Outcomes
- Understand electrical systems, instrumentation and process control for oil and gas facilities

Target Audience
Instrument, Mechanical, Electrical Technicians and Technologists.

DURATION/Dates
3 Days March 11-13 May 6-8
October 7-9

Course Title and Introduction

ADVANCED INSTRUMENTATION AND CONTROL:

This course applies fundamental instrumentation and control engineering principles to oil and gas facilities design and operation, and is designed to accelerate the development of new facilities Instrumentation and Control Engineers. Through the use of individual and group problem solving, attendees will learn about field measurement devices, final elements and actuators, pressure relief and regulation, documentation, programmable logic controllers

Course Content
- Field measurement devices including level,
- pressure, temperature, and flow
- Final elements and actuators including control loops, control valves, shutdown valves, actuators, and transducers
- P&ID symbols and instrument tags, loop and logic diagrams, Pitfalls and best practices, ISA symbology, and creation of instrument and I/O Lists
- Signal types and wiring requirements for analog/discrete inputs and outputs as well as other signals such as thermocouple, RTD, pulse, and digital
- Typical control system functions, limitations, and architectures for PLC and DCS systems including programming and ladder logic
- Process control basics with an emphasis on control loops, types, and configurations for common oil and gas process equipment such as separators, pumps, distillation towers, filters, contactors, compressors, heat exchangers, and fired heaters

Learning Outcomes
- Understand electrical systems, instrumentation and

process control for oil and gas facilities

Target Audience
Instrument, Mechanical, Electrical Engineers, Technicians and Technologists.

DURATION/Dates
3 Days April 8-10 September 23-25

Course Title and Introduction

POWER SYSTEM PROTECTION:

This three-day course covers the fundamentals of power system protection, current best practice, protection system management and new developments in protection technology.

Course Content
- Philosophy of protection
- Power system components.
- Protective schemes
- Switchgear
- Protection of feeders
- Bus-bar protection
- Transformer protection
- Generator protection
- Motor protection
- Relay application tables

Learning Outcomes
- Appreciate the need for power system protection.
- List various types of protective schemes.
- Explain the protection of power system components.

Target Audience
Electrical engineers
Electrical technologists/instructors
Electrical technicians
Electrical consultants
Contractors.

DURATION/Dates
3 Days March 4-6 April 22-24
August 5-7

Course Title and Introduction

ELECTRONIC INSTRUMENTATION:

Electronic Instrumentation has come to acquire a great deal of significance as today, in our day to day lives we are increasingly using tools, appliances, and instruments which contain electronic components. This course empowers participants to provide professional skill and knowledge in this area

Course Content
- General concepts of Instrumentation
- Transducers and Transmitters
- Signal Conditioning
- Analogue Controllers
- Digital Controllers
- SCADA
- Alarms Implementations
- Fieldbuses

Learning Outcomes
- Be able to choose transducers for specific applications
- Be able to generate alarms
- Understand the use of microprocessors and microcomputers in a control loop.
- Understand the modern transmission systems

Target Audience
Engineers and Technicians in Oil, Gas, and Allied Industries as well as those in Manufacturing, Academic, and Research Institutions.

DURATION/Dates
5 Days April 8-12 October 21-25

Course Title and Introduction

CONTROLLERS AND PROCESS CONTROL SYSTEMS IN THE PETROLEUM AND ALLIED INDUSTRIES - FUNDAMENTAL:

An introductory course that provides participants with fundamentals in process control systems

Course Content
- introduction to Process Control Systems
- Manual and Automatic Control Systems
- Understanding Process Control System Terminologies
- Understanding the Basic Characteristics of Control

Systems
- Implementing the Control Modes Using Pneumatic Systems
- Implementing the Control Modes Using Electronic Systems
- Introduction to Programmable Logic Control System PLCand Programmable Logic Devices

Learning Outcomes
- To get participants knowledgeable in the field of process
- controllers.
- To give basic understanding of the various control system available in the industry.
- To acquaint participant with the knowledge of the various controllers available in the industry.
- To introduce participant to Microprocessor and Microcontroller.

Target Audience
Production Engineers and Technologist (ii) Electrical/Electronic and Instrumentation Personnel in-charge of Installation and maintenance of facilities in production plants

DURATION/Dates

5 Days	May 20-24	August 12-16
	October 21-25	

Course Title and Introduction

Controllers and process control systems in the petroleum and allied industries - Advanced:

A three day course that provides participants with advanced in-depth knowledge process control systems management in the petroleum and allied industries

Course Content
- Microprocessor and Microcontrollers and their application in Process Control
- Distributed Process Control System in the Industries
- SCADA Controlled Systems

Learning Outcomes
- To get participants acquainted with the knowledge of programmable logic controllers and programmable logic devices.
- To get participant to learn about computer controlled and supervised production system.

Target Audience
Mechanical, Petroleum Process and instrument engineers Plant Superintendents and Managers (v) Process plant operators (vi) Chemical, Pharmaceutical, Production plants operators, food processing plants, engineers, technologist and operators (vii) Instructors in the Universities, olytechnics and collages of education in the field of Electrical, echanical, Petroleum and Chemical Engineering etc.

DURATION/Dates

3 Days	March 11-13	September 9-11

Course Title and Introduction

Cable joining and termination:

This course is designed to ensure anyone attending is made familiar with the procedures involved in the installation of medium/high voltage cable accessories. The course is very much “hands on” but there is a degree of simple theory given to explain the workings of cables and accessories, why failures occur and ways of ensuring failures are kept to a minimum.

Course Content
- Product design
- Cable Construction and Preparation
- Installation techniques
- Understand manufacturers Installation instructions

Learning Outcomes
- Apply the latest techniques in MV/HV cable splicing, joining, terminating and testing
- Discuss cable joining and the different types of cables, insulation materials, termination and joints
- Describe the construction of cables, conductor materials and configurations
- Identify various types of cable connectors, materials and methods of connection
- Apply the theory of joints and termination
- Practice cable joining, splicing, testing and terminating

Target Audience
Electrical engineers, electrical staff, instrumentation control

engineers, project engineers, maintenance engineers, power system protection and control engineers, data system planners, electrical and instrumentation technicians.

DURATION/Dates

3 Days April 16-18 September 9-11

Course Title and Introduction

Management of electrical projects:

Effective project management is essential to deliver electrical projects on time, on budget and to specification. This course is designed to equip you with the understanding, tools and techniques you need to manage a range of electrical projects.

Course Content

- Project Management and the Project Lifecycle
- Project Organisation and Stakeholder Management
- Project Lifecycle: Development Phase and Risk
- Project Reporting and Project
- Management Techniques
- Project Lifecycle: Handover & Closure Phase

Learning Outcomes

- Develop essential project management skills
- Understand the stages and teams required for effective project delivery
- Gain valuable tools and techniques for effective project management
- Enhance your ability to deliver projects on time and on budget
- Reduce the risk of delays, cost overruns and creep
- Apply your skills through a series of workshop exercises

Target Audience

Engineers and Technicians in Oil, Gas, and Allied Industries as well as those in Manufacturing, Academic, and Research Institutions.

DURATION/Dates

3 Days April 2-4 August 6-8

Course Title and Introduction

PLC Programming, Troubleshooting & Maintenance:

The course aims to enable technical personnel to understand the PLC system better, make basic modifications to the user control program and to troubleshoot quickly using both software and machine diagrams. Problem exercises are given and simulated with the aid of a PLC trainer. Aside the generic understanding of the PLC system, participants have the opportunity of product specific knowledge through hands-on practice using PLC hardware and software/simulators

Course Content

- Identifying System and Software Components
- Communicating with a PLC
- Interpreting Project Organization and Execution
- Creating Tags and Monitoring Data
- Basic Ladder Logic programming
- Editing Ladder Logic Online
- Introduction to Structured Text, Function Block Diagrams and Sequential programming
- Documenting and Printing Components
- Searching for Project Components
- Programming Add-On Instructions
- Starting a Ladder Diagram &Testing a Ladder Diagram
- Programming Timer, Counter, Compare, Move and Math Instructions
- Preventative Maintenance and Troubleshooting Strategies

Learning Outcomes

- Understand the operational principle of a PLC.
- Identify and describe the functions of the PLC system components
- Carry out basic installation and operation of an Omron PLC system
- Create a control Program in Ladder Diagram language;
- Translate a ladder diagram program into electrical and logic circuits equivalent;
- Effectively Carry out Basic Maintenance and Troubleshooting of PLC systems
- Observe safe practices when working with PLC and its devices

Target Audience

Personnel involved in Operation, Installation, and Maintenance of PLC control systems.

DURATION/Dates

5 Days April 8 -12 November 11-15

Course Title and Introduction

PLC & SCADA for Automation & Process Control:

This course is designed to teach the student the knowledge required in industrial environments. This course will provide the necessary information for Plant Operation which involves process control.

Course Content
- Introduction to Control Strategies
- Control Systems
- Open Loop Control System
- Closed Loop Control System
- Modern Applications
- Industrial Control Systems
- PLC and RTU-Differences
- PLC Basic
- Requirements
- Terminology
- Inputs/outputs
- Network Communications

Learning Outcomes
- Be able to understand operation and technical terms used in a plant
- Understand basic communication method
- Be able to identify type of SCADA used
- Be able to understand types of PLC and its functionalities

Target Audience
Craftsman, technicians, technologist, engineers and any person with a science background.

DURATION/Dates
5 Days May 20-24 August 26-30

Course Title and Introduction

PROCESS CONTROL AND INSTRUMENTATION:

In order to meet the exacting demands of the oil and gas, mining, manufacturing and downstream processing industries, modern plants are equipped with systems and devices which are needed to measure and regulate variables such as temperature, pressure, flow, humidity, liquid level, velocity and density. This professional development course is designed to provide participants with critical knowledge and practical tools that can be immediately applied to the workplace

Course Content
- Function, constitution, signal types. Tag naming conventions and symbolization on Piping & Instrument Diagrams (P&ID).
- Control loop and Safety Instrumented Function (SIF).
- echnologies to measure & detect the pressure, temperature, level, flow and weight.
- Working principles and configuration parameters.
- Selection criteria according to process needs.
- Controller role and performance criteria.
- ON/OFF and PID controller.
- Controller tuning methodologies.
- Introduction to advanced process control
- Role, architecture and functions of a Distributed Control Systems (DCS). Separation of control and safety systems.
- Introduction to Safety Instrumented Systems (SIS). Multiple safety layers principle.

Learning Outcomes
- Be able to read and understand a P&ID
- Be able to select optimal technology for sensors and valves,
- Be able to increase control loop performance.

Target Audience
Managers, Engineers and technicians from process industries.

DURATION/Dates
5 Days June 10-14 September 16-20

Course Title and Introduction

LIQUID AND GAS FLOW METERING AND CUSTODY MEASUREMENT:

This course is designed to acquaint users with the problems and solutions for high accuracy transfer of liquid and gas petroleum products from supplier to customer.

Course Content
- The laws governing fluids and gases

- Important principles of flow-metering including accuracy and repeatability
- Main types and applications of Flowmeters with emphasis on custody transfer
- Flowmeter proving and calibration techniques
- Custody transfer principles and applications

Learning Outcomes
- Recall the basics of fluid mechanics
- Identify the fundamental problems related to uncertainty
- Compare the different methods of measuring flow in the oil and gas industries
- Describe the various methods of level measurement
- Compare the different methods used to derive strapping tables
- Evaluate the different custody transfer standards in use today
- Contrast the methods used in flow calibration

Target Audience
Any personnel who are, or will be, responsible for designing, selecting, sizing, specifying, installing, testing, operating, and maintaining instrumentation related to the field of custody level and flow transfer measurement. This could include facilities, process, chemical, electrical, instrumentation, maintenance, and mechanical engineers and technicians.

DURATION/Dates
3 Days July 8-10

Course Title and Introduction

CONTROL VALVES, ACTUATORS AND POSITIONERS:

Combinations of valves and actuators are used in just about every process around the world, and the proper understanding and utilization of them is crucial to efficient operations and control. This training course has been designed in such a way as to empower delegates to think practically about valve and actuator installations, in a manner that allows them to consider, select and install the best piece of equipment for the application at hand.

Course Content
- Different types of valves, and their suitability to a variety of applications
- Actuators, valve positioners, filters, regulators, I/Ps, and other associated hardware
- Understanding the valve coefficient and determining the correct valve size and type
- Valves in P&IDs, installation and maintenance considerations, and cavitation and noise control
- Optimizing the use of control valves, using digital controllers

Learning Outcomes
- Comprehend the inner operation of most commonly utilized valve types
- Decide on the best valve to use, for specific applications
- Determine the most cost-effective valve size
- Determine the best device to drive and operate an assortment of valves
- Get control valves to operate optimally in the field, using an assortment of techniques

Target Audience
Instrumentation personnel involved in valve maintenance, senior management and staff responsible for valve and actuator selection, mechanical and electrical staff that come into contact with valves, process control engineers, industrial engineers and staff responsible for plant safety and all personnel with a vested interest in applications that require/utilize valves

DURATION/Dates
3 Days July 15-17

Course Title and Introduction

ELECTRONIC SYSTEMS MAINTENANCE & INSTALLATION:

The course provides the maintenance personnel (participants) with the fundamental skills and the necessary knowledge required to effectively carry out maintenance tasks on electronic systems. This short course work prepares the individual in areas such as electrical code, semiconductor devices, motor controls, circuits and power systems.

SKILLS TO BE AQUIRED
Skill in Electronics Maintenance helps to improve technical

knowledge, skills to maintain, install and service, and electronic systems. These are great skill for those who enjoy taking apart devices and putting them back together in the oil and gas, production and manufacturing industries. These include;

- Hands on training and problem solving skills.
- Strong communication skills in industries and in the field to clearly express concerns and explain solutions.
- The skill to identify the many colour-coded components in electronics
- The skill to maintain and install Business Machines, Communications Systems , Computer systems, Industrial Electronics systems, Security Systems and other electrical appliance.

COURSE CONTENTS

- Analogue and digital electronic systems
- Basic electronic components and symbols (resistors, capacitors, transistors, diodes, integrated circuits, relays, transformers, regulators thyristors etc.)
- Identification of basic electronic components
- Functions of basic electronic components
- Digital and analog systems circuit/schematic diagrams
- Electronic system maintenance and types of maintenance.
- Maintenance procedures/steps
- Electronic system maintenance tools, instruments and materials and their functions
- Safety precautions/rules in electronic system maintenance
- First aid for burns.

LEARNING OUTCOME

- To understand; Analogue and digital electronic systems, components, component symbols and their functions
- To know electronic system circuit and schematic diagrams
- To understand; Electronic maintenance, types of maintenance
- To know maintenance procedures/steps
- To understand; Electronic system maintenance tools, instruments and materials and their functions
- To understand safety precautions in electronics system maintenance and repair and first aid for burns.

TARGET AUDIENCE

Electrical/Electronics/ Telecommunication engineers, technologists and technicians in oil and gas, production and manufacturing industries, instructors, technologists and technicians in academic and research institutes and anybody who can read and write.

DURATION/DATES: 5 days

March 1-5 July 5-9

Course Title and Introduction

ELECTRONIC SYSTEMS TROUBLESHOOTING & REPAIR:

The course provides the participants with the fundamental skills and the necessary knowledge required to effectively carry out troubleshooting and repair tasks on electronic systems. This short course work prepares the individual in areas such as electrical code, semiconductor devices, motor controls, circuits and power systems.

SKILLS TO BE AQUIRED

Skill in Electronic systems troubleshooting and repair helps to improve technical knowledge, skills to install, service, and repair electrical and electronic systems. These are great skill for those who enjoy taking apart devices and putting them back together in the oil and gas industries, production and manufacturing industries. These include;

- Hands on training and problem-solving skills.
- Strong communication skills in industries and in the field to clearly express concerns and explain solutions.
- The skill to identify the many colour-coded components in electronics
- The skill troubleshoot and repair Business Machine, Communications Systems, Computer system, Industrial Electronic systems, Security System and other electrical appliances.

COURSE CONTENTS

- Electronic systems troubleshooting techniques
- Competences and performance criteria
- General troubleshooting guidelines
- Troubleshooting documentation
- Troubleshooting Steps
- Troubleshooting tools, instruments and materials and their functions
- Types of faults
- Fault finding techniques- the systematic approach
- How to locate open circuit, short circuit and overload

faults in electronic circuits:
- Signal tracing and injection basics
- Soldering and desoldering (soldering and desoldering techniques)
- Safety precautions/rules in troubleshooting and repair of electronic systems
- First aid for burns.

LEARNING OUTCOME
- To understand; troubleshooting tools, instruments and materials and their functions
- To understand general troubleshooting techniques and steps
- To understand types of faults and fault finding techniques (fault location)
- To understand signal tracing and injection basics
- To understand soldering and desoldering techniques
- To understand safety precautions/rules in electronics system troubleshooting and repair and first aid for burns.

TARGET AUDIENCE
Electrical/Electronics/ Telecommunication engineers, technologists and technicians in oil and gas, production and manufacturing industries, instructors, technologists and technicians in academic and research institutes and anybody who can read and write.

DURATION/DATES:
5 days Feb 22-26 June 21-25

Course Title and Introduction

BASIC INDUSTRIAL ELECTRONICS

The course provides the participants (Engineers, Technologists and Technicians) the full practical skills and knowledge of Basic Industrial Electronics in the area of Power Electronics, Industrial Automation, Instrumentation and Control System.
The course covers some of the methods and facets of: control systems, instrumentation, mechanism and diagnosis, signal processing and automation of various industrial applications. The scope of industrial electronics ranges from the design and applications of simple electronic semiconductor devices, solid-state devices and stabilized power supply systems.

COURSE CONTENTS
- Definition of electronics, semiconductor devices and its applications.
- Electrical parameters of semiconductor devices (THYRISTORS, FETs, DIODES, THERMISTORs, RELAYS AND LDRs)
- Basic electronic components and design of a stabilised power supply circuit.
- Operation and application of semiconductor devices.
- Operation and application of Rectifier ICs, microprocessor ICS, voltage regulators ICs.

LEARNING OUTCOME
- To understand Industrial Electronics and its applications
- To understand the nature and classification of electronic semiconductor materials.
- To know electrical parameters, electrons flow, DC/AC, types of circuits, passive and active devices
- To understand the Operation and application of semiconductor devices.
- To understand the Operation and application of Rectifier ICs, microprocessor ICS, voltage regulators ICs.
- To understand the design and construction of a regulated power supply circuit.

TARGET AUDIENCE
Electrical/Electronics/ Telecommunication engineers, technologists and technicians in oil and gas, production and manufacturing industries, instructors, technologists and technicians in academic and research institutes.

DURATION/DATES:
5 days April 12-16 Aug 2-6

Course Title and Introduction

ADVANCED INDUSTRIAL ELECTRONICS & APPLICATIONS

The course provides the participants (Engineers, Technologists and Technicians) the full practical skills and knowledge of Basic Industrial Electronics in the area of Power Electronics, Industrial Automation, Instrumentation and Control System.
The course covers some of the methods and facets of: control systems, instrumentation, mechanism and diagnosis,

signal processing and automation of various industrial applications. The scope of industrial electronics ranges from the design and applications of simple electronic semiconductor devices, solid-state devices and stabilized power supply systems.

COURSE CONTENTS

- Semiconductor devices and their pplications.
- Electrical parameters of semiconductor devices (THYRISTORS, FETs, DIODES,THERMISTORs, RELAYS AND LDRs)
- Operation and application of Operational amplifiers.
- Operation and applications of Light emitting diodes (LED) and light dependent resistors (LDR)
- Basic electronic components and design of a stabilised power supply circuit.
- Principles of operation and applications of inverters.
- Operation and application of semiconductor devices.
- Operation and application of Rectifier ICs, microprocessor ICS, voltage regulators ICs.

LEARNING OUTCOME

- To understand Industrial Electronics and its applications
- To understand the nature and classification of electronic semiconductor materials.
- To understand the Operation and application of Operational amplifiers.
- To understand the Operation and applications of Light emitting diodes (LED) and light dependent resistors (LDR)
- To understand Principles of operation and applications of inverters
- To know electrical parameters, electrons flow, DC/AC, types of circuits, passive and active devices
- To understand the Operation and application of semiconductor devices.
- To understand the Operation and application of Rectifier ICs, microprocessor ICS, voltage regulators ICs.
- To understand the design and construction of an Inverter circuit.

TARGET AUDIENCE

Electrical/Electronics/ Telecommunication engineers, technologists and technicians in oil and gas, production and manufacturing industries, instructors, technologists and technicians in academic and research institutes.

DURATION/DATES: 5 days

March 15-19 Sept. 6-10.

Course Title and Introduction

DIGITAL ELECTRONICS AND APPLICATIONS:

This course provides basic operational principles to equip the trainees with the necessary knowledge and skills for digital systems and the engineering of devices that use or produce them. Digital electronics, deals with digital signals and has a revolutionary advantage in size and efficiency over analogue electronics, it plays a crucial role in our life, especially in industries where it is used for efficiency optimisation.

COURSE CONTENTS

- Analogue and Digital Signals/Electronics**;** Nature of signals and the need for ADCs and DACs.
- Digital Signal Representation**; c**ode, dynamic range (DR) and resolution, major features of digital electronics, merits and demerits of digital systems.
- Number Systems, Operations and Codes.
- Logic Gates and their applications.
- Binary Arithmetic, Boolean Laws and Minimization Techniques.
- Combinational Logic design procedure and applications.
- Signal Interfacing, filtering and Processing.
- Crystal Metal Oxide Semiconductor (CMOS) and Transistor-Transistor Logic (TTL) operation and applications.

LEARNING OUTCOME

- To understand Analogue and Digital Signals/Electronics**;** Nature of signals and the need for ADCs and DACs.
- To understand Digital Signal Representation**; c**ode, dynamic range (DR) and resolution, major features of digital electronics, merits and demerits of digital systems.
- To understand Number Systems, Operations and Codes.
- To understand Logic Gates and their applications.
- To understand Binary Arithmetic, Boolean Laws and Minimization Techniques.
- To understand Combinational Logic design procedure and applications.

- To understand Signal Interfacing, filtering and Processing.
- To understand Crystal Metal Oxide Semiconductor (CMOS) and Transistor-Transistor Logic (TTL) operation and applications.
- Design of a two, three or four-ways control system using logic circuit.

TARGET AUDIENCE

Electrical/Electronics/ Telecommunication engineers, technologists and technicians in oil and gas, production and manufacturing industries, instructors, technologists and technicians in academic and research institutes.

DURATION/DATES:

5 days April 19-23 Sept 20-24

Course Title and Introduction

DIGITAL SYSTEMS DESIGN AND APPLICATIONS:

This course is aimed at equipping the trainees with the concept, knowledge and skills of defining the architecture, modules, interfaces and data for an electronic system to perform tasks under specific requirements. It provides a platform where systems theoretical knowledge is converted into electronic system development.

COURSE CONTENTS

- Combinational logic circuits
- Design and implementation of combinational logic circuits for performing tasks
- Logic circuit operation with pulse waveform inputs
- Design and applications of Adders, Comparators, encoder and decoder, code converter, multiplexers and demultiplexers.
- Flip-flops and their applications,
- Design and implementations of Multivibrators using 555 timer in control related functions.
- Counters, Registers and their applications
- Microprocessors, microcontrollers and their applications

LEARNING OUTCOME

- To understand the Design and implementation of combinational logic circuits for performing tasks
- To understand Logic circuit operations with pulse waveform inputs
- Design and applications of Adders, Comparators, encoder and decoder.
- To understand Flip-flops and their applications,
- Design and applications of Multivibrators using 555 timer in control related functions.
- To understand Counters, Registers and their applications
- To understand Microprocessors, microcontrollers and their applications.
- To understand and identify design requirements and implementation of electronic systems for a given tasks such as valve control, automatic car park, traffic light system, etc.

TARGET AUDIENCE

Electrical/Electronics/ Telecommunication engineers, technologists and technicians in oil and gas, production and manufacturing, and other industries, and also instructors, technologists and technicians in academic and research institutes.

DURATION/DATES:

5 days March 15-19`
July 26-30

Course Title and Introduction

COMMUNICATION SYSTEM AND APPLICATIONS:

The course provides Electronics and Telecommunication Engineers, Technologists, Technicians and others with the fundamental knowledge and skills of Basic Communications systems.

COURSE CONTENTS

- Basic communication systems.
- Overview of basic principles of radio & TV broadcasting.
- Antennas and propagation.
- Radio waves propagation and applications.
- Overview of cables used in communication systems and their areas of applications.
- Two-Way Radios and Intercom systems
- Networking protocols in communication systems (LAN, MAN, WAN)

LEARNING OUTCOME

To understand:

- Basic communication systems.
- Basic principles of radio & TV broadcasting.
- Antennas and their propagation modes.
- Radio wave propagation and its applications.
- Types of cables used in communication systems and their areas of applications.
- Two-Way Radios and Intercom systems
- Networking protocols used in communication systems (LAN, MAN, WAN).
- To understand principle of operation of Wide Area Network (WAN), principle of operation of Local Area Network (LAN), principle of operation of Ethernet, principle of operation of Fieldbus.

TARGET AUDIENCE

Electrical/Electronics/ Telecommunication engineers, technologists and technicians in oil and gas, production and manufacturing industries, instructors, technologists and technicians in academic and research institutes.

DURATION/DATES:

5 days March 1-5 July 5-9

Course Title and Introduction

ADVANCED COMMUNICATIONS SYSTEM:

The course provides Electronics and Telecommunication Engineers, Technologists and Technicians and others with the fundamental knowledge and skills and applications of fibre optics, Satellite and RADAR systems, Microwave technology,

COURSE CONTENT

- Fibre optics technology: Fibre optics principles, types of fibre optics, advantage of fibre optics, applications of fibre-optic.
- Introduction to microwave technology, Fading, Link analysis and considerations, and applications.
- RF and Microwave cables, connectors, adapters, and attenuators, and applications.
- Satellite and RADAR communication systems and applications.

LEARNING OUTCOME

- To understand principle of operation of satellite communication, various uses of satellite communications, technological overview of satellite communications, and the different orbits for satellite communications.
- To know the ranges of radio waves, the propagation effects, transmission loss, what is Fresnel zones, what is hydrometeors, effect of rain on signal propagation, effect of fogs and clouds on signal propagation, fading, etc.
- To understand principle of operation of fibre optics, advantages of fibre optics, principle of operation of fibre optics, applications of fibre-optic, the concept of connecting fibre-optic.
- To understand principle of microwave technology, effect of rain fade on microwave links, the uses of microwave links.
- Design, configuration and installation of satellite dish.

TARGET AUDIENCE

Electrical/Electronics/ Telecommunication engineers, technologists and technicians in oil and gas, production and manufacturing industries, instructors, technologists and technicians in academic and research institutes.

DURATION/DATES:

5 days March 8-12 Aug. 16-20

Course Title and Introduction

PRACTICAL ELECTRIC FENCE SYSTEM INSTALLATION AND MAINTENANCE:

This course is aimed at equipping the trainees with a good knowledge and skills on how to install an effective electric fence system to provide perimeter security.

COURSE CONTENTS

- Electric fencing components and equipment's;
- Basic electronic and electrical theory as applied to electric fencing;
- Installation, configuration, quotation, work plans and administration;
- Earthing systems;
- Overvoltage, electromagnetic interference and ground potential;
- Communication systems.
- Electric fence circuits, monitoring systems and electrical systems.

- Energizer installation and programming.
- Legal requirements for electric fencing.
- Safety and precautions.

LEARNING OUTCOME

- To understand the basic principle of electric fence systems
- To identify the components of electric fence system and their functions
- To understand design requirements for electric fence system design
- To understand how to conduct a security survey for electric perimeter security
- To understand how to evaluate the numbers of various electric fence components
- To understand how to select the right energiser and their programming.
- To understand basic definition and requirement of electric fence
- To understand how to troubleshoot and maintain electric fence systems.
- Design, installation and maintenance of electric fencing.

TARGET AUDIENCE

Anyone interested in becoming an Electric Fence Dealer, Installers and Technicians, Project Managers, Security Managers, Building Contractors, Engineers and Consultants and Sales Staff of electronic security equipment.

DURATION/DATES:

5 days	March 15-19	July 5-9
	Nov22-26	

Course Title and Introduction

CCTV SYSTEMS INSTALLATION AND MAINTENANCE:

This course provides the trainees with a good knowledge and skills on how to conduct security survey analysis for a professional installation of CCTV surveillance system to secure lives and properties by providing one or more of the following security functions: deterrent, protection, evident gathering, monitoring, etc.

COURSE CONTENTS

- Introduction to CCTV systems and applications
- Planning; security survey analysis
- Basic components of a CCTV system and their functions.
- Types of cameras and their areas of application.
- Camera specifications: Sensitivity, signal to noise ratio and resolution.
- Back Focus adjustment.
- Lens types: Fixed and variable focal length, manual and motorised zoom.
- Use of lens calculator.
- Scene illumination: Lighting considerations, LED's, infrared lamp maintenance and bulb life.
- Switches, Quads, Multiplexers and control systems: – Types and applications.
- Monitors and Multiple screen displays.
- Recording the footage: Analogue and Digital video recorders.
- Time-lapse recording. Reviewing video footage.
- Use of test equipment including: Multimeters, Oscilloscopes, Light Meters, Pattern Generators and Cable Length Meters.
- Relevant standards, issues and the “Operational Requirement”.
- Bill of Engineering Materials Evaluation (BEME)
- Safety and precautions

LEARNING OUTCOME

- To understand the basic working principle of CCTV systems
- To identify the components of CCTV systems and their functions
- To understand how to conduct security survey analysis for effective CCTV system design
- To understand how CCTV system components are chosen for a specific system design
- To understand how BEME is produce
- To understand the relevant standards, issues, and operational requirements
- To understand how effective CCTV surveillance systems are built and maintained.
- Design, installation and maintenance of CCTV system.

TARGET AUDIENCE

Security managers and professionals, Engineers and

consultants, CCTV Installers and Technicians, Project managers, Building contractors, Sales Staff of electronic security equipment, CCTV security system dealers, etc.

DURATION/DATES:

5 days Feb. 8-12 June 14-18
Oct.4-8

INSTRUMENTS, POWER, GROUNDING AND ISOLATIONS:

Course Content

- Power Quality
- Reliable Power Supply
- Power System Design & Installation
- Power Conditioning
- Grounding effect of mouse
- Shield grounding
- Isolation
- Earth Resistance test for Instruments Location

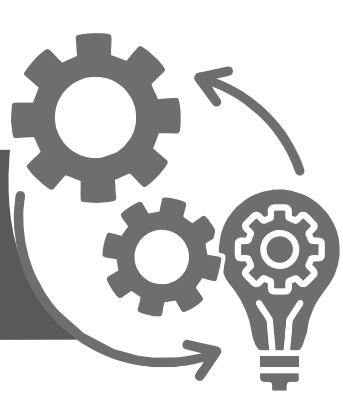
Craftsman, technicians, technologist, engineers and any person with a science background.

DURATION/Dates

3 Days March 18-20 July 22-24

Mechanical/Materials Technology & Maintenance Programs

Mechanical/Materials Technology & Maintenance Programs



Course Title and Introductio

MAINTENANCE MANAGEMENT BEST PRACTICES:

Maintenance Management Best Practices are critical for every successful individual and company. This comprehensive 5-day training course has been designed to benefit both qualified new professionals as well as experienced professionals who might need to refresh their skills. It covers all the fundamentals of Maintenance Management that a suitably qualified professional would be expected to carry out during his duty starting with the first steps and building up in a stair case fashion to a fully functional maintenance organisation.

Course Content

- An Overview of Key Maintenance Work Processes
- Maintenance Management Systems
- Preventive Maintenance and Maintenance Strategy
- Maintenance Logistics and Cost Control
- Introduction to Life Cycle Cost Concepts
- Maintenance Team Work
- Implementing Team Based Continuous Improvement in Maintenance

Learning Outcomes

- To instruct Maintenance Management optimization best practice techniques
- To provide opportunities to discuss the application of these best practices
- Provide an opportunity to learn these concepts through practical exercises

Target Audience

It is highly recommended that all Maintenance, Reliability, Engineering and technical support staff including leadership and management attend this PTI training course. If you and your company are interested in greatly increasing productivity, this will be a very valuable training course.

DURATION/Dates

5 Days April 12-16 August 2-6

Course Title and Introduction

MAINTENANCE MANAGEMENT & TECHNOLOGY BEST PRACTICES:

Maintenance Best Practices are critical for every successful individual and company. This comprehensive 2 – weeks training course has been designed to benefit both qualified new professionals as well as experienced professionals who might need to refresh their skills. It covers all the fundamentals of Maintenance that a suitably qualified professional would be expected to carry out during his duty starting with the first steps and building up in a stair case fashion to a fully functional maintenance organisation.

Course Content

- Systems, Tools & Techniques
- An Overview of Key Maintenance Work Processes
- Maintenance Management Systems
- Preventive Maintenance and Maintenance Strategy
- Maintenance Logistics and Cost Control
- Introduction to Life Cycle Cost Concepts
- Maintenance Team Work
- Implementing Team Based Continuous Improvement in Maintenance
- Module 2 Inspection, Analysis & Monitoring
- Failure of Machines and Inspection Based Failure Analysis
- Statistical Failure Analysis and Reliability
- Condition Based Maintenance
- Machinery Condition Monitoring
- Vibration Analysis

Learning Outcomes

- To provide a step-by-step guide to maintenance best practice starting with foundations and building up to best practice that will deliver maximum business benefits
- To instruct Maintenance optimization best practice techniques
- To provide opportunities to discuss the application of these best practices
- Provide an opportunity to learn these concepts through practical exercises

Target Audience
It is highly recommended that all Maintenance, Reliability, Engineering and technical support staff including leadership and management attend this training course. If you and your company are interested in greatly increasing productivity, this will be a very valuable training course.

DURATION/Dates
10 Days July 5-16

Course Title and Introduction

ROTATING EQUIPMENT: START-UP, OPERATION, MAINTENANCE, & TROUBLESHOOTING:

This intensive training course will introduce delegates to different types of pumps, compressors, turbines and associated equipment, such as bearings, seals, filters, separators, etc. The focus of the training course will be on the start-up and operation of these machines and their optimal maintenance, diagnostics and troubleshooting techniques.

Course Content
- Principles of pump, compressor and turbine start up and operation
- Best practices for maintenance and repair
- Measurement and control of performance of these machines
- Inspection and diagnosing the root cause of problems
- Troubleshooting techniques for operational problems of pumps, compressors and turbines

Learning Outcomes
- Understand different types of pumps, compressors and turbines.
- Operate pumps, compressors and turbines close to the design efficiency.
- Monitor pump compressor and turbine reliability and availability and cost effectiveness
- Select the best operation and maintenance strategy
- Troubleshoot pump, compressor and turbine problems

Target Audience
Technical Personnel in charge of production
Maintenance and Operation Engineers
Operators
Supervisors
Engineering Managers

DURATION/Dates
5 Days March 22-26 November 1-5

Course Title and Introduction

PROCESS & MECHANICAL ENGINEERING ESSENTIALS:

This intensive and combined training course focuses on the central areas of Process and Mechanical Engineering and guides the delegates in developing both fundamental and practical understandings of key issues. Process engineering is at the heart of much of the chemical, oil, gas, and petrochemical industries.

Course Content
- Module 1 Process Engineering Essentials: Upstream & Downstream Process Control &Optimization
- Introduction and Fundamentals of Process Engineering
- Hydraulics and Fluid Flow
- Heat Transfer and Reaction Engineering
- Distillation Processes and Equipment
- Process Control and Economics
- Module 2 - Mechanical Engineering Essentials: Rotating & Static Equipment & Structural Integrity
- Module 2: Mechanical Engineering Essentials: Rotating & Static Equipment & Structural Integrity
- Introduction & Fundamentals of Materials Selection, Types & Failures
- Static Equipment, Valves, Piping & Fitness for Service
- Rotating Equipment, Pumps & Compressors
- Corrosion & Corrosion Protection
- Code and Standards, Condition Monitoring & Non Destructive Inspection techniques

Learning Outcomes
- Apply practical understanding of central issues in process & mechanical engineering in oil, gas, petrochemical, chemical, and allied facilities
- Understand fundamental principles used in processes & facilities & apply practical understanding of essential process units & classes of units involved in separations, heat exchange & reactions.
- Apply practical understanding to static & rotating mechanical equipment & related condition mentoring & inspection techniques.
- Understand mechanical testing methods, Failure

Mechanisms & Fitness for Service, NDT & principles of corrosion & corrosion protection.
- Perform relevant calculations & analyses to assist in operation, sizing, & troubleshooting of chemical processes & mechanical equipment.

Target Audience
Petroleum Engineers
Maintenance & Production Engineers
Process Engineers
R&D Chemists, Plant Chemists
Economists & Business Managers

DURATION/Dates
10 Days June 14-25

Course Title and Introduction

MECHANICAL ENGINEERING ESSENTIALS: ROTATING & STATIC EQUIPMENT & STRUCTURAL INTEGRITY:

The Mechanical Engineering Essentials training course will enable Technical personnel to familiarise not only with sound engineering principles, but also with other engineering techniques including inspection; monitoring and condition evaluation. This intensive training course is designed to allow individuals working in fields such as mechanical, process and petrochemical engineering, and other related fields, an opportunity to update their skills and improve their basic knowledge of modern Mechanical Engineering skills.

Course Content
- Materials selection, testing and failure
- Corrosion principles and protection
- Static equipment including pipes and valves
- Rotating equipment including pumps and compressors
- Condition monitoring, inspection & NDT (Non-Destructive Testing)

Learning Outcomes
- Understand Failure Mechanisms & Fitness for Service associated with engineering materials.
- Have a sound understanding of corrosion mechanisms and protection against corrosion.
- Develop their knowledge of static equipment related to piping systems and valves.
- Consolidate their understanding of rotating equipment including pumps and compressors.
- Appreciate topics related to condition mentoring, inspection and Non-Destructive Testing.

Target Audience
Technical & non-technical personnel in the chemical, petrochemical, oil & mechanical industries with a need to understand and discuss fundamental mechanical engineering issues
Maintenance and project engineers, production engineers, trainee mechanical engineers and plant operators
Non-experienced personnel needing a basic understanding of Mechanical Engineering concepts

DURATION/Dates
5 Days March 15-19 June 21-25 Sept. 20-24

Course Title and Introduction

PROCESS CONTROL VALVES AND ACTUATORS: SIZING, SELECTION, INSTALLATION & MAINTENANCE:

The Process Control Valves and Actuators training course has been designed to take all plant employees (regardless of their background knowledge), and build them up to be versatile and proficient in the use and operation of the various control valves, as well as the devices that are used to operate the control valves, themselves.
This training course has been designed to focus on applications and practical examples that would be deemed relevant, and the working environment of the delegates will be very carefully enquired about, so that all exercises remain work-related, for the delegates

Course Content
- Essentials and characteristics of control valves
- Actuators, positioners and other related hardware
- Sizing and selection, using various techniques
- Valve installation and maintenance
- PID Tuning methods used on processes, that make use of control valves

Learning Outcomes
- Recognize and understand how a valve works
- Appreciate the different types of valves available
- Apply valve sizing techniques, using software and other methods of calculation
- Appraise the advantages and disadvantages of various types of positioners

- Experiment with correctly tuning a control valve

Target Audience
Process Control Engineers, Electrical Engineers, Mechanical Engineers, Industrial Engineers, Designers and the like

DURATION/Dates
5 Days March 2-6 July 12-16 Oct. 11-15

Course Title and Introduction

PROCESS UTILITY SYSTEMS: OPERATIONS, MAINTENANCE AND OPTIMIZATION:

The Process Utility Systems training course will feature the importance and relevance of process utilities used in today industrial operations. It will familiarise the delegates with the various practices used for selection, operation and maintenance of various equipment used in process utilities. It will be demonstrated how these utility systems are efficiently integrated into oil and gas facilities. This training course will also cover important practical aspects useful for engineers and operators in dealing with their basic utilities, including maintenance and troubleshooting of equipment and components.

Course Content
- Knowledge for selection of different process plant utilities: steam, water, compressed air, refrigerants, inert gas, fuels, electricity and others
- Types of equipment used to run process plant with different utilities.
- Basic aspects of steam generation and distribution, water handling, compressed air utilization and other process utilities
- Different types of equipment used to run process plant with different utilities.

Learning Outcomes
- Understand the operation and maintenance of main process plant utilities
- Analyse optimization of steam generation, utilization and distribution
- Evaluate parameters of water preparation systems
- Determine the correct selection criteria for compressed air systems
- Optimize the use of refrigeration, inert gas, fuel supply and electric systems

Target Audience
Plant operators dealing with process utilities
Maintenance Professionals
Plant facility engineers
Technical Managers
Process Supervisors
Inspection Personnel

DURATION/Dates
5 Days May 16-20 August 19-23

Course Title and Introduction

MECHANICAL EQUIPMENT: COMPRESSORS, PUMPS, SEALS, MOTORS, AND VARIABLE - SPEED DRIVES:

This Mechanical Equipment training course will provide a comprehensive understanding of equipment operating characteristics. It will introduce delegates to essential types of mechanical equipment, including positive displacement and dynamic pumps and compressors, motors and drives and their associated systems and components. The applications of these equipments will be discussed along with their suitability for different operational duties and selection criteria. In addition, the seminar will focus on associated equipment including packing, mechanical sealing systems, bearings and valves.
This training course will focus on maximising the efficiency, reliability, and longevity of this equipment by providing a thorough understanding of the characteristics, common problems, condition monitoring and maintenance criteria related to machinery and equipment operation.

Course Content
- Pumps and pumping systems
- Compressors and compression systems
- Motors and Variable Speed Drives
- Discussion of associated equipment such as mechanical seal design, bearings, & valves
- Condition monitoring and Predictive Maintenance techniques

Learning Outcomes
- Identify the different types of pumps & compressors, & learn about selection, operation & maintenance strategies.
- Operate pumps & compressors as close as possible to the design efficiency & monitor their availability &

reliability.
- Identify & learn about associated components such as mechanical seals & bearings & identify their failure mechanisms.
- Condition, monitor and troubleshoot pump and compressor problems.
- Specify, operate and maintain fluid movers (Motors) and drivers (Variable Speed Drives).

Target Audience
Professionals in Maintenance, Engineering and Production
Those with little or no prior formal background who function as Managers, Planners, Inspectors, Designers, Researchers, Investors or Procurers
Those who are or will become involve at any stage in project applications and applicable maintenance technologies

DURATION/Dates
5 Days April 12-16 Aug. 2-6 Nov. 9-13

Course Title and Introduction

FUNDAMENTALS OF QUALITY INSPECTION:

In this course you will learn the skills and knowledge required for quality inspection and how inspection fits in a quality management system.
Learn the basic math required including algebra, geometry and trigonometry. You will understand inspection plans and sampling methods. Learn how to read engineering drawings including the symbols, terms, notes and views associated with the drawings as well as the basics of geometric dimensioning and
tolerancing system.

Course Content
Technical Math
Metrology
Engineering Drawings
- Drawing Types
- GD&T
- Sampling Inspection
- AQL Sample Inspection
- Quality Assurance and Improvements
- Control of nonconforming material
- Basic Statistics and applications
- Statistical Process Control (SPC)
- Process Capability (Cp)
- Quality Improvement PDCA, tools and techniques
- Lean and six-sigma methods

Learning Outcomes
- Understand what is required for quality inspection
- Know how inspection fits in a QMS
- Learn basic math for quality inspections
- Know equipment and its use
- Read engineering drawings
- Learn basics of GD&T
- Understand inspection plans and AQL sampling methods

Target Audience
Those new to quality inspection or wishing to refresh their knowledge of quality inspection, This material follows the ASQ Body of Knowledge for Certified Quality Inspector and is a good first step for those may be considering certification in the future.

DURATION/Dates
3 Days May 3-5 Aug. 2-4 Oct. 25-27

Course Title and Introduction

QUALITY ASSURANCE AND QUALITY CONTROL IN ENGINEERING DESIGN AND PRACTICE:

In this course you will learn the skills and knowledge required for quality inspection and how inspection fits in a quality management system. The course also provides an introduction to basic concepts for charting process behavior using statistical process control charts, (SPC). Participants will receive a basic understanding of tools and methods used to measure and understand process behavior over time, and also learn how quality fundamentals can transform your organization.
Review and apply the commonly used quality tools and techniques for problem solving and process improvement. Build basic quality awareness and competency in your organization and set a foundation on which you can build more advanced quality methods and tools. Increase your knowledge and understanding of how to use quality practices and principles.

Course Content
Historical perspective
- The Need for Quality

- What is Quality?
- Advantages of Quality Systems
- Quality Codes and Standards
- Quality Management (Planning, Control & Improvement)
- Basic Statistics and Applications
- SPC
- Quality Audits
- Quality Improvement
- Quality Tools and Techniques
- Understanding Variations
- Inspection, Test and Process Capability
- Blueprints Interpretation, Geometric Dimensioning & Tolerancing (GD&T)
- Inspection Techniques and Processes
- Process Capability
- Relative Capability
- Capability Studies
- Quality in Engineering Design
- The Taguchi's Approach
- Areas of Application of Quality in Engineering
- Case Studies

Learning Outcomes

- Understand how quality benefits employees, the organization, and customers.
- Review and apply the commonly used quality tools and techniques for problem solving and process improvement.
- Construct and interpret Statistical Process Control charts for variable and attribute data
- Perform a capability analysis
- Recognize when to apply the tools and techniques to complete the measure, analyze, or control phase of a Six Sigma project
- Perform calculations as required
- Understand the differences between common cause and special cause variation
- Analyze process variation

DURATION/Dates

4 Days April 19-22 Aug. 16-19 Nov. 22-25

Course Title and Introduction

THE COMPLETE COURSE ON FACILITIES MANAGEMENT: FACILITIES MANAGEMENT SPECIALIST:

This highly popular training course features how to establish, implement, manage and continually improve your facility department to get the best out of your facilities within the given boundaries of costs, performance and other important factors during its total lifetime.

This training course is designed to develop delegate's skills in managing facility staff and corporate assets while minimizing risk exposure in the workplace. As the Facilities Management (FM) function continues to evolve, this training course offers the latest thinking in the profession, right balance between asset performance (functionality, availability, reliability, safety), and will tackle specific issues encountered on the ground and apply best practices in discussing real solutions.

Course Content

- Proper knowledge of the basics principles of facilities management
- How to apply best practices according to several norms
- Understanding how to operate and maintain facilities as a “business within a business”
- Sharing of facilities management experience
- Insights regarding current state of facilities management processes and possibilities to improve them

Learning Outcomes

- Understand the basics of facilities management
- Understand how to draw up a preventive maintenance concept, based on risk
- Develop strategies to decide when and what to outsource
- Understand the different contract types
- Identify and monitor the facilities management-processes performance

Target Audience

Professionals who are responsible for the management, operation and maintenance of facilities (buildings, production facilities, utilities, power and water distributions networks landscaping, etc.)

Professionals aiming to update themselves on the basic elements, best practices and implementation aspects of facilities management.

DURATION/Dates

5 Days May 17-21 September 13-17

Diving Welding Engineering and Offshore Technology

Diving Welding Engineering and Offshore Technology Department

With the advance in technology, emergence of new materials and developments in process design, welding forms a vital part in the production of efficient, precise and reliable components and assemblies.

Underwater operations continue to get more attention as government policies are geared towards off-shore technology. This brings to light the highly technical operation of underwater services.

The department undertakes the following services:
- Maintenance and Design! Fabrication of platform
- Weld testing of pipes and joints.
- Hot gas welding of plastics
- Diving Operations (Repairs & Maintenance)
- Checking of pipe/metal for corrosion
- Underwater Equipment's Maintenance

These services are readily available to all oil companies as well as government agencies.

WELD DEFECTS

Course Objective:
- Recognize surface and internal defects in fission welds
- Understand the reasons for defect formation.
- Prepare reports on the results of visual inspection.

Course Outline:
- Safety in welding
- Features of welds and joints
- Causes of Surface and internal weld defects
- Classification of defects
- Prevention and cure of defects
- Factors affecting weld defects
- Testing of weld specimen
- Extensive hand-on examination and reporting of typical defective weldment.

COURSE CONTENT:
Welding inspectors/supervisors and production personnel responsible for weld quality.

Duration: 5 days

INSPECTION PRACTICES IN WELDING.

Course Objective:
To enable participants at the end of the course to be able to supervise projects effectively, prepare procedure specification, progress report and support qualified welders to work on a project.

Course Outline:
- Duties of on Inspector
- Essential requirements of an Inspector
- Inspection Procedures
- Welding Processes and Typical Welding Defects.
- Welding Symbols/Joint Geometry
- Welding Metallurgy
- Testing of Welds.
- Visual Inspection of Welds
- Welders and Procedure Qualification

COURSE CONTENT:
Welding Inspectors, Supervisors and Project Engineers and quality control staff associated with welding.

Duration: 5 days

PRACTICAL INDUSTRIAL RADIOGRAPHY

Course Objective:
To help participants to effectively operate radiographic equipment, develop films and interpret defects.

Course Outline:
Safety in welding workshops
Features of Welds and Joints Weld Defects
Safety in radiography
Technology of radiography
Practical radiography
Effective reporting.

COURSE CONTENT: Radiographers, Inspectors, and quality control personnel.

Duration:

HEALTH AND SAFETYIN WELDING.

Course Objective:
At the end of the course; participants should be able to work safely in a welding workshop, identity unsafe areas in a workshop, prepare accident prevention plan corrective & safety procedures for workers.

Course Outline:
- Welding and Cuffing
- Health Hazards Fumes, Gases, Radiation Noise, Heat
- Industrial Safety Explosion and Fire Hazards, confined working space, electric shock Workplace regulations
- Accident reporting
- Safety management.

COURSE CONTENT:
Fabrication Managers/Supervisors, Safety Personnel and Welding Inspectors.

Duration:

WELDING OF PRESSURE STEEL VESSELS

Course Objective:
- At the end of the course, the participants will be able to: -
- Understand the role of metallurgy in welding technology.
- Appreciate the effect of alloying element material properties.
- Identify' the weld ability problems in carbon and low alloy steels.
- Understand the causes and significance of metallurgical defects in weldments.
- Appreciate the requirements of preheat and post weld heat treatment procedures.
- Appreciate the requirements for safe fabrication of pressure vessel steels at minimum cost.

Course Outline:
- Steels for pressure vessels
- The general effects of welding steels
- The avoidance of welding problems
- The avoidance of service problems.

COURSE CONTENT:
Production engineers, welding supervisors, welding technicians/technologist QA/OC personnel and inspection staff whose functions requires the welding knowledge critical for production of pressure vessels.

Duration: 5 days

PIPE WELDING

Course Objective:
To expose participants to the problems associated with pipe-welding and to produce defect- free welds.

Course Outline:
- Safety in welding workshop
- Limitations of penetration and reinforcement
- Pipe Welding Technology a Methods of Pipe Welding
- Testing of Welded Pipes
- Accident reporting
- Safety management.

COURSE CONTENT:
Practicing Welders, Welding Inspectors and Supervisors.

Duration:3 Weeks

ESSENTIALS OF WELDING DESIGN

Course Objective:
Welded design, like most technologies, has its own terminology and also has basic rules which need to be followed if a fabrication is to be made efficiently and economically. This course equips participants to be able to carry out an effective weld design.

Course Outline:
The welded joint
Steps for successful design
Features of welding processes
Joint Edge preparations/Weld Geometry
Strength of welded joints
Materials selection and process control to avoid brittle

fracture
WPS (Welding Procedure Specifications)
Design exercises.

COURSE CONTENT:
Project engineers, design engineers and Welders and all technical staff who require an understanding of the Influence of Design in Production of an acceptable welded fabrications.

Duration: 5 days

PLASTIC WELDING

Course Objective:
At the end of the course, the participants will be able to:-
- Understand the technology of plastics
- Classify plastics
- Understand the various uses of plastic.
- Understand the techniques of plastic Welding.

Course Outline:
- Classification and uses of plastics
- Profiles of plastic welding processes
- Plastic welding technology
- Safety in welding workshop
- Practical welding of plastics
- Testing of Plastic Welds.

COURSE CONTENT:
Welding Technicians, Welding Supervisors, Site Engineers/Supervisors and Production Engineers.

Duration: 10 days

QUALITY ASSURANCE/CONTROL IN WELDING.

Course Objective:
To enable participants have thorough knowledge of the requirement of International
Standards and Codes for Weldment. Produce high Skilled Welders and Supervisors.

Course Outline:
- QA/OC Concepts
- Exposure of participants to International Standards and Codes BSS, ASME, AWS etc.
- The Quality Manual/Plan
- Application of the relevant documentation and Standards to quality of welded fabrication.
- Understand the variables involved in weld Fabrication.
- Understand the effectiveness of the QC function.

COURSE CONTENT:
Welding Supervisors, Site engineers and all technical staff in the stream of Quality Control and Quality Assurance.

Duration: **5 days**

ALUMINIUM WELDING (TUNGSTEN INERT GAS (HG))

Course Objective:
To expose participants to the problems associated with Aluminum welds using the Tungsten Insert Gas Process.

Course Outline:
- Safety in Welding
- Metallurgy of Aluminum
- Aluminum Welding Technology
- Practical Welding of Aluminum
- Testing of Welded Specimens.

COURSE CONTENT:
Practicing Welders and Supervisors

Duration: 10 Days

SAFETY IN INDUSTRIAL RADIOGRAPHY

Course Objective:
The participants at the end of the course should be acquainted with safety regulation and practices associated with Industrial Radiography.

Course Outline:
- Health and Safety Hazards in Welding
- Basis of Industrial Radiography
- Effects of Radiation
- Safe Distance Calculation
- Safety equipment in Radiography.

COURSE CONTENT:
Radiographers, Inspectors, Instructors, Safety Quality and

Control Personnel.

Duration

WELDING APPRECIATION/ELECTRIC ARC WELDING

Course Objectives:
On completion participants will be able to:
- Identify the arc welding processes, their features equipment and process.
- Carry out on arc welding design by drawing-up an arc welding procedure specification.
- Recommend any appropriate testing and evaluation techniques of welds.

Course Outline:
- Historical Development of are welding processes
- Are welding processes
- Weld design
- Arc welding procedure specification
- Weld testing and evaluation techniques.

COURSE CONTENT:
Production and Maintenance Engineers, Welding Inspectors and Supervisors.

Duration: 5 Days

WELDING OF DUPLEX AND OTHER STAINLESS STEELS

ATM: This course introduces basic metallurgy of the stainless steels. It highlights the weld ability problems associated with the various stainless-steel types and shown how optimum properties of corrosion resistance and/or toughness can be aimed for in practice.

Course Outlines:
- Basic metallurgy and properties of stainless steels
- Corrosion and oxidation resistance
- Weldability of conventional stainless steels
- Avoidance of weld defects
- Use of Schaeffler diagram of dissimilar joints.
- Weld overlaying and welding clad steels.
- Practical

Course Objectives:
Those who have attended with be able to:
- Appreciate the influence of composition of stainless steel properties.
- Understand the various weldability problems of the different grades.
- Identify the welding conditions necessary to achieve optimum weld area corrosion resistance.
- Recognize how stainless steel corrosion resistance be degraded.
- Apply their knowledge to welding of dissimilar joints and weld overlays

COURSE CONTENT:
Production Engineers, Welding Supervisors, Welding Technicians/Technologists, OA/QC personnel and Inspection staff whose functions requires the important welding knowledge, critical for sound production and applications of stainless-steel materials in oil and gas sectors, chemical process plant, food/beverage and drug industries and general engineering.

Duration: 10 Days

METALLOGRAPRY (Metallurgy Fundamentals and Specimen Preparation) and **INTERMEDIATE METAILOGRAPIIY** (Microstructural Interpretation)

Metallographic Techniques in the following:
- Elements of Metallurgy and Metallurgy for the Non-Metallurgist the following:
- Introduction to Metallurgical Lab Practices
- Basics of Heat Treating
- Heat Treating Furnaces and Equipment
- Practical Heat Treating
- Metallography for Failure Analysis

Practical Interpretation of Microstructures the following:
- Steel Metallography (formerly Microstructural Analysis of Ferrous Alloys)
- Heat Treatment, Microstructures and Properties of Carbon and Alloy Steels
- Aluminum and Its Alloys
- Titanium and Its Alloys
- Nickel and. Its Alloys
- Superalloys
- Stainless Steels

Understanding the relationship between the properties and microstructures of metallic materials plays an extremely

important part in quality control, failure investigation and development of new materials and alloys. Many properties of metallic materials like corrosion resistance, yield strength, hardness, elongation, conductivity and tensile strength are closely related to the microstructure.

As such, microstructure examination is an extremely important test method that can be used to determine the possible failure mode of a component, detect fabrication defects and confirm correct material selection.

Lesson outcome:-.

- Sample preparation using various materials preparation techniques
- Microstructural characterisation of a wide range of materials, using light microscopy, including metals, ceramics and polymers, in the lab
- Review of the effect of each step of sample preparation, including choice of etchant, on finished metallographic samples
- Review of the use of metallography and fractography in failure analysis
- Detailed discussion of best practice for digital imaging of the prepared samples using low magnification microscopes and high magnification compound microscopes.
- Quantitative image analysis methods
- Demonstration of fixed machines/devices for hardness and percent ferrite measurements
- Documentation of microstructures and other features
- Explanation of running an efficient and safe laboratory with high throughput whilst maintaining a high level of quality, including HSE requirements, lab layout and time saving sample preparation techniques

This course teaches the underlying theories and principles of on-she metallography, before moving on to deliver a practical workshop. Candidates will learn essential practical skills from experts in the field of metallography, using industry-leading equipment, techniques, and consumables.

This course is ideally suited to technicians, lab managers engineers from non-materials engineering disciplines who want to develop an in-depth understanding of the processes and capabilities of field metallography as an analytical technique for quality control, inspection, and failure investigation.

By the end of the course, you should be able to:

- Gain a wide appreciation of the processes involved in best practice preparation of metallographie, fractographic and geometric replicas
- Understand the equipment and consumables requirements for field metallography
- Understand the tools that can be used to analyze specimens and microstructures
- Effectively record and report

Duration: 10 Days

ASSET INTEGRITY MANAGEMENT OF AGING FACILITIES

This course will enhance significant and lasting difference to your asset integrity capabilities.

- ANALYSE the essential components of a functioning TM system
- REVIEW major incidents and target learning to real-life scenarios
- LEARN key asset threats and how to identify and mitigate them
- IMPLEMENT key Integrity services such as risk based inspection and pipeline Integrity
- UNDERSTAND the latest risk based TM methodologies & techniques
- COMPLETE a series of Integrity case studies and gain hands on experience

WHO SHOULD ATTEND

The course is intended for Managers, Engineers, Inspectors and Technicians in the fields of:

- Integrity & Inspection
- Engineering
- Maintenance
- Process & Operations
- USE

From heavy industry but especially:

- Oil & Gas
- Petrochemical & Chemical
- Refineries
- Power & Utilities
- Engineering
- Nuclear

COURSE OVERVIEW

Integrity course provides both theoretical and practical

exposure to the foundations of asset integrity management and explains how it should be implemented to safeguard assets, people and the environment. The course focuses on modem risk based methodologies to manage asset integrity in both newly constructed and aged facilities. It explains and then addresses key threats facing the Oil and Gas industry and provides both established and innovative practices to safely mitigate them within these following areas:

- Asset Integrity Elements
- Asset Integrity Life Cycle
- Asset Integrity Barriers
- Safety Critical Elements and
- Operational Corrosion Management
- Risk Based Inspection
- Pipeline Integrity Management
- Key Performance Indicators
- Integrity and Maintenance Build
- Asset Integrity Review Process

Duration: 5 Days

HOT TAPPING OF STEEL PIPELINE

- Welders
- Welding personnel
- Safety personnel
- Metallurgist Mechanical engineers
- Welding Inspectors

Course Overview

Hot tapping is an alternative procedure that makes a new pipeline connection while the pipeline remains in- service. This process is highly essential to the oil and gas industry as it avoids shut down, disruption of service to customers and loss. The skill and expertise required to carry on hot tap is enormous as safety is crucial. This course will teach the practical and technology required to execute a hot tap.

- Welders
- Welding personnel
- Safety personnel
- Metallurgist
- Mechanical engineers

Welding Inspectors

Duration: 10 Days

SAFETY & UNDERWATER RESPONSE SWIMMING AND OFFSHORE PERSONALSURVIVAL TECHNIQUES

Course Objectives:

To provide participant with the necessary skill is and confidence to survive in the event of any ship mishap and installation.

Participant will develop skill in the use of apparatus and safety equipment offshore.

Course Outline:-

Introduction

BASIC SWIMMING KNOWLEDGE AND SKILLS

- Swimming techniques and strokes
- Entries and exits
- Treading water
- Surface Dive
- Compact jump
- Use of Life-Jacket
- Life-Saving Appliances and Safety Equipment.
- Safety equipment
- Enclosed lifeboats/Tempse
- Marine Lifercafs
- Life floats
- Personal Floating Device (PFD). BASIC Seamanship
- Basic boat and vessel Safety
- Baring Crew boats and Platform
- Vessel to platform (Basket)
- Vessel to platform.

BOAT DRILL

- Objective of boat drills
- Procedure and instruction
- Use of life-jacket
- Fire drills/communication
- Abandonment drill (Controlled abandonment procedure).
- Release of Life boat/Liferaft.

GUIDELINE FOR SURVIVAL.

- Man Overboard
- If personal boat becomes disabled
- Personal survival health skills
- Fire incidents on a platform
- Bad weather condition.

HEALTH AND SAFETY IN WATER ENVIROMNT-DEE1MTIONS OF RELATED SAFETY TERMS

- Health, Hazard, Danger, Risk, Disaster. etc.
- Safety Objectives
- Safety in water borne operations
- Supervisor responsibilities
- Role of safety officer
- Workers obligation
- Accident Reporting/Investigation
- Transportation Safety
- Water Safety.
- Air Safety
- Entering water from height
- Drowning
- Human Chain
- Rescue Operations/Procedure

COURSE CONTENT: Offshore oil/gas and Allied Company personnel, Contractors, Consultants, Government Agencies, Inspection Engineers.

Duration:(3 weeks)

DIVING APPRECIATION

Course Objective:
To provide normal academic knowledge and current techniques of diving to enhance thc diver's skills.

Course Content:
Theory and practice of scuba and surface demand diving techniques as follows:

- Dive theory
- Dive safety
- Dive physiology
- Technical drawing
- Off-shore operations
- Equipment maintenance
- Dive practice
- Technical Communication
- Chamber manipulation.

Duration:(6 Weeks)

UNDERWATER CUTTING AND WELDING

Course Objective:
To afford the participants the knowledge and skills to practice underwater welding and cuffing and other maintenance operations

Course Content:
Underwater Welding Methods and Processes Includes:

- Flux shielded Arc
- Gas shielded Arc
- Atmosphere welding
- Planning
- Safety.

Underwater Cutting Methods and Processes Includes:

- Oxy-are
- Thermic lance
- Kerie cable
- Comparison of methods
- Safety.

COURSE CONTENT: Old and experienced Divers without formal training

Duration:(5 Weeks)

SAFETY IN UNDERWATER TASK AND ACTIVITIES

COURSE OBJECTIVE:
Middle management personnel, Engineers, Divers, Supervisors, Non-divers Technologists and Divers

COURSE CONTENT:
Practicing diving technicians.

Objectives:-
To enable participants acquire the knowledge and skill in safety in underwater task and activities.

Course Outline:

- Introduction
- Safety in Underwater cutting and welding operation
- General safety precaution of arc Cutting/Welding.
- Topside Arc Cutting/Welding and Power Supply.
- Electrode and Cutting Torches.
- Safety Switch and Oxygen Supply.
- Personal Safety in Diving
- Diving Dress(es)

- Safety Precautions for the Diver
- Salvage Operation
- Inspection and Survey.

Duration: 5 Days

BASIC OFFSHORE SAFETY INDUCTION AND EMERGENCY TRAINING (BOSIET)

Course Objectives:-
This course is designed to provide personnel who wish to work offshore with a basic knowledge of safety and emergency response procedures.

Course Structure:
The course structure is an intensive theoretical and practical sessions.
Delegates will be expected to demonstrate their level of appropriate knowledge and understanding of the training programme content in both theoretical and practical assessment. The theory element of the course with be undertaken in classroom at PTI conference centre. The training requirements had been tailored in line with the local cultures to meet all the appropriate international standard.

Course Content:-
The course content focuses on:-
- Basic safety induction
- Helicopter safety and escape
- Basic Seamanship
- Safety equipment
- Lifesaving appliances
- Sea survival
- Firefighting and-self rescue

Target Audience
Aimed at personnel employed on an offshore installation in Nigeria and West African offshore sector:
Prerequisites: None

Duration: 5 Days

Course Title and Introduction

FACILITY MANAGEMENT AND MAINTENANCE:

This is a course designed for Facility Managers and Office Personnel. It is intended to give them the know-how to effectively manage the physical assets and to implement maintenance best practices as part of integrated facilities management in their organization. It provides an overview of the latest tools and techniques for facilities maintenance and asset management, their benefit and potential pitfalls and when and how to apply them for maximum impact on the growth and performance improvement of the organization.

Course Content
- Property and Facilities Management?
- Developing Facilities Management Strategy
- Procurement of FM services
- Operational Management
- Asset Management
- Maintenance Management
- Managing Office Workplace
- Performance Review
- Whole Life Economics Space
- Financial Management in FM
- Management Information Systems
- Risk Management in FM
- Sustainability in FM
- Troubleshooting Emergency Recovery
- Managing Information Systems in FM

Learning Outcomes

Target Audience
The course is designed for facility managers, officer administrator and those performing similar responsibilities in the management of assets in organizations. It is also suitable for young and middle level personnel transitioning to facility management responsibilities.

DURATION/Dates
3 Days June 14-16 October 4-6

Course Title and Introduction

RELIABILITY, AVAILABILITY AND MAINTAINABILITY (RAM) FOR OIL AND GAS OPERATIONS:

This training course introduces participants to best practices, principles and processes for RAM in oil and gas operations

Course Content

- Reliability, Availability and Maintainability
- Reliability & Maintenance
- RAM Methodology
- RAM Case Studies

Learning Outcomes

- To understand and apply the Reliability concept.
- Understand and apply the Availability concept
- Understand and apply the Maintainability concept
- Understand and implement the RAM methodology applied to different asset lifecycle phases.
- Understand how to organize and assess the historical failure and repair database.
- Understand how to use specialist opinion to predict Reliability and maintainability.
- Understand and apply the methods to define type Probability Density function (PDF) in order to predict PDF parameters, reliability, failure rate.
- Be able to model the equipment in component level applying RBD and FTA.
- Understand the effect of preventive maintenance and inspection in equipment reliability and operational availability.
- To understand and apply the concept of preventive maintenance optimization, that means, define the preventive maintenance interval which leads to the minimum cost (LCC) with higher operational availability.
- To understand how to integrate FMEA, RCM and RAM analysis to support asset management.

Target Audience

Asset Managers, Maintenance Managers, Production Managers; Reliability Engineer/Maintenance Engineer/ Supervisor; Rotating Engineer/ Static Engineer/Supervisor; Design Engineer/Production Engineer; Everybody who wants to broaden knowledge and interest in this topic.

DURATION/Dates

5 days April 12-16 October 11-15

Course Title and Introduction

PIPELINE OPERATIONS AND MAINTENANCE:

Pipeline systems for oil and gas industry play important role in modern industrial operations. The purpose of this training course is to present basic characteristics of efficient operation of pipelines in various engineering applications
This training course will cover the interaction of pipelines with flow moving equipment, i.e. pumps and compressors and technical characteristics of operation of pump and compressor stations
The delegates will be introduced to main points of inspection and testing according to relevant API standards

Course Content

Overview of Technical Characteristics of Pipelines

- Overview of main elements of oil and gas pipeline systems
- Selection & sizing of pipelines:
- Use of ASME B31.G
- Pipeline materials
- Pipeline flow and measurements
  Operation & Material Degradation
- Erosion, corrosion & stress corrosion cracking
- Corrosion Direct Assessment: External (ECDA) and internal (ICDA) Methods
- Pipeline protection
- Metal loss inline inspection (ILI) and smart pigging (NDT) monitoring
- Pipeline fatigue, cracks, seam defects and ruptures
  Operation & Safety Management
- Safety & Instrumentation,
- Pipeline failure prevention & root cause analysis
- Leak detection methods (LDAR) and patrolling & surveillance: SCADA
- Inspection (RBI), Hydrostatic test methodology
  Maintenance Technologies
- Pipeline reconditioning
- Vibrations and support integrity
- Repair technologies
- Maintenance of valves, fittings and accessories
- Valve repair: hot tapping, temporary plugging (stopple)
  Testing & Monitoring in Operation
- Hydrostatic testing

- Reliability and availability of pipelines in operation
- Risk based inspection (RBI)
- Fitness for Service (FFS)
- Estimate of remaining life of equipment

Learning Outcomes

- Identification of basic principles of safe operation & efficient maintenance of pipelines for various industrial applications.
- Developing deep understanding & familiarity with the practical aspects of operation and maintenance activities.
- Illustrate the concepts discussed and be provided with necessary experience in applying them.
- Use & follow the guidelines & best industrial practices related to operation, control, inspection & testing of pipelines.

Target Audience

- Process, chemical and mechanical engineers working in petrochemical and process industry, including oil refineries and gas production companies where operation and maintenance of pipelines are high importance
- Operation, technical service and maintenance professionals from various processing plants involved in everyday operation, control, inspection and maintenance of pipelines
- Engineers and consultants dealing with planning of new production lines and retrofitting plants and introducing new technologies
- Technical professionals responsible for maintenance and repair of equipment

DURATION/Dates

5 Days	April 19-23	November 15-19

Oil and Gas Business Management Programs

Oil and Gas Business Management Programs

Course Title and Introduction

THE PETROLEUM INDUSTRY: FROM UPSTREAM TO DOWNSTREAM:

This comprehensive oil & gas training course recognizes the need for professionals to have a comprehensive and broad understanding of the Petroleum Industry from A to Z - from upstream to downstream.
Oil and gas are the world's most important energy resources driving the global economy. The processes and systems required for oil and gas production, refining and distribution are highly complex, capital-intensive and require state-of-the-art technology.
This training course will serve as an introduction to the petroleum industry and will greatly assist those who need to progress to a detailed knowledge of the industry.

Course Content

- Details of oil & gas processing including exploration, refining, storage transportation and retailing
- Understanding of the value chain from the well to consumer
- Understanding of the fundamental technologies of both upstream and downstream oil & gas industries
- Understanding of the ways the oil & gas industries are organized to operate effectively and efficiently
- Develop the necessary skills to evaluate and make effective decisions related to the oil & gas industry

Learning Outcomes

- Identify key process operations related to the exploration & production of upstream industry feedstock
- Analyze the key process operations related to refining and production of downstream products
- Recognize the total spectrum of the oil and gas industry and the challenges faced
- Develop skills to assist in the evaluation of corporate opportunities
- Understand the structure of the oil and gas business

Target Audience

Technologists, Mechanical engineers, Safety and Inspection engineers, Operations, Maintenance or project engineers and anyone requiring a broad understanding of the structure, operations and economics of the oil and gas industries

DURATION/Dates

5 Days Mar 25-29 Aug 20-24

Course Title and Introduction

SERVICE STATION MANAGEMENT:

This course is designed to give participants a fundamental foundation in the operation of a service station with emphasis on leadership, time management, analytical thinking, problem solving skills, sales orientation, and how the employee impacts the customer experience.

Course Content

- Introduction to Service Station
- Management Principles for Service Station
- Health Safety and Environment management in a Service Station
- Pump Maintenance
- Forecourt Management
- Employee Management
- Customer Care
- Record Keeping and Stock Taking
- Accounting Principles

Learning Outcomes

Delegates will be acquainted with and be able to implement the applicable principles performing maintenance functions, forecourt management, the operational management requirements to execute an overall control system as part of the operational strategy to successfully manage a service station in the petroleum industry.

Target Audience

Service Station Managers/Supervisors, Company Retail/Sales Managers, Sales Representatives, Dealers, Petroleum Marketers, Service Station personnel and other professionals in the downstream sector of the oil and gas industry

DURATION/Dates

4 Days	Mar 18-21	Aug 19-22

Course Title and Introduction

CRUDE OIL MARKETING: OPERATIONS AND REGULATORY COMPLIANCE:

This course focuses on the dynamics of the crude oil market and is designed for all participants in the crude oil marketing value chain; depot supervisors/managers, oil marketers, regulators and others who might want to gain professional and up-to-date insight on how the crude oil market works and the attendant opportunities.

Course Content

- The Nigerian Crude Oil Market: Trends, opportunities and Challenges
- Petroleum Marketing Legislations and Regulations in Nigeria
- Sales of Crude Oil in Nigeria: Procedures and Legal Framework

Learning Outcomes

- Understand the crude oil market in Nigeria
- Understand petroleum marketing legislations and compliance requirements

Target Audience

Service Station Managers/Supervisors, Company Retail/Sales Managers, Sales Representatives, Dealers, Petroleum Marketers, Service Station personnel and other professionals in the downstream sector of the oil and gas industry

DURATION/Dates

4 Days	April 8-11	Oct 7-10

Course Title and Introduction

LEADERSHIP STRATEGY - CRISIS MANAGEMENT, PROBLEM SOLVING & DECISION MAKING:

Considering the challenges bedeviling the oil and gas and other allied sectors in Nigeria, a demand exists for leaders who can understand the intricate nature of the environment in which their organizations conduct business, identify potential conflicts, proffer solutions and make the right decisions. This course is designed to arm the current or emerging leader with the skills necessary to meet this demand in the global business terrain.

Course Content

- Leadership Styles and strategies
- Crisis Management
- Gap analysis, need assessment and problem awareness
- Problem solving techniques
- Regulatory Compliance Management
- Risk identification, analysis and management
- Planning and Goal Setting: Strategy and Execution
- Decision Making process and communication skills

Learning Outcomes

- Identify individual Leadership Styles and strategies
- Know how to manage crisis and proffer solutions
- Gain modern Problem-solving skills and techniques
- Understanding corporate social responsibility
- Improve Decision Making process and communication skills

Target Audience

Top Management, HR Managers, Administrators, Supervisors, Managers, Team Leaders, Business Owners/Executives and other professionals.

DURATION/Dates

3 Days	April 1-3 Nov 4-6	July 1-3

Course Title and Introduction

PETROLEUM DEPOT OPERATIONS MANAGEMENT:

This course is designed to meet the skill requirements of personnel working in petroleum depot operations. Attendees will gain knowledge of best practices/guidance on day to day operations of depots, roles and responsibilities, applicable construction/design codes and standards and developing required control measures.

Course Content

- Depot Operations: Overview
- Depot Construction and Design: Technical Codes and Standards

- Product Quality Control
- Record Keeping: Stock Accounting and Control
- Risk Identification and Management
- Emergency Preparedness and Contingency Planning
- Product receipts, handling and storage
- Equipment Integrity: Maintenance and Calibration

Learning Outcomes
- Understand depot operations
- Understand product accounting procedures
- Understand HSE principles for depots
- Understand equipment integrity and maintenance issues for depots

Target Audience
Depot Managers, Service Station Managers/Supervisors, Company Retail/Sales Managers, Sales Representatives, Dealers, Petroleum Marketers, Service Station personnel and other professionals in the downstream sector of the oil and gas industry.

DURATION/Dates
4 Days April 23-26 Nov 25-28

Course Title and Introduction

NEGOTIATION SKILLS FOR THE PETROLEUM INDUSTRY:

This highly-interactive workshop demonstrates a structured approach to effective negotiating and introduces Breakthrough Negotiation Strategy to achieve results in difficult and complex negotiations. Participants will, practice the negotiation techniques in real oil and gas scenarios, learn how to improve communication skills to achieve better results and become a more effective negotiator in both contract content and style of negotiation.

Course Content -
- Negotiation Process and Negotiating Outcomes
- Communication and Human Behavior in Negotiations
- Bringing the Deal to a Successful Conclusion
- Conflict Management Styles

Learning Outcomes -
- Understanding the Negotiation Process and Negotiating Outcomes
- Understand human behavior and proper communication techniques
- Understand how to close deals during negotiations
- Understand best practices for managing conflict

Target Audience
Oil & Gas Lawyers & Contract Negotiators who want to refresh their negotiating skills Commercial, Technical and Legal Managers & Executives who are expected to undertake or support major negotiations. Professionals and support staff working with contracts and agreements or working in project teams from across the industry

DURATION/Dates
3 Days Mar 18-20 June 17-19
Oct 28-30

Course Title and Introduction

INTERNATIONAL OIL AND GAS LAW:

This course offers participants the opportunity to study the legal aspects of the oil & gas industry, develop a practical expertise, and confidently identify potential legal problems, address them before they become serious, and facilitate the smooth interaction between oil and gas professionals, host government representatives, and their lawyers.

Course Content
- Overview of World Petroleum Agreements and the Oil and Gas Industry
- Jurisdictional issues and the international legal framework
- Tax and Fiscal Policy: Harvesting sovereign resources
- Decommissioning
- Contractual Risk Management
- Environmental Regulation, Renewables and the emerging onshore sector

Learning Outcomes
Understand the legal aspects of the oil and gas industry and be able to utilize same to improve business decisions.

Target Audience
Petroleum Managers, Legal Managers, Top Management, Contract Managers, other professionals

DURATION/Dates
3 Days May 6-8 Nov 25-27

Course Title and Introduction

GAS BUSINESS ANALYSIS, DEVELOPMENT AND FINANCIAL MANAGEMENT IN NIGERIA:

This course offers participants the opportunity to understand and analyze gas business, its development and marketing and financial requirements as relates to the Nigerian market.

Course Content
- Overview of the global petroleum, oil & gas Industry
- Gas business analysis and development
- Marketing, Transportation & Distribution of Petroleum (Gas)
- Financial Management, Statement & Analysis
- Statistics for Decision Making
- Industry Regulation, Deregulation & Convergence
- Managing Petroleum Price and Volume
- Leadership, Strategic Planning & Implementation
- Petroleum Industry Accounting and Taxation
- Effective Business Communication
- Petroleum Contracts & Economy
- Project & Risk Management
- Legal Aspect of Petroleum, Oil & Gas

Learning Outcomes
- Understand the Gas Business in Nigeria
- Identify Gas Business Opportunities in Nigeria
- Analyze the gas market in Nigeria and make recommendations for expansion
- Understand marketing of gas in Nigeria
- Understand the financial aspects of gas market
- HSE and management in the gas industry

Target Audience
Business Managers, Gas Managers, Professionals and support staff working with Gas Businesses in project teams from across the industry.

DURATION/Dates

4 Days	May 20-23	Nov 25-28

Course Title and Introduction

INTRODUCTION TO PETROLEUM ECONOMICS:
This course will introduce a variety of fundamental petroleum economic principles including revenue, expenditures, fiscal systems, risk analysis, and investment analysis and is designed to provide both commercial and technical personnel with a fundamental understanding of the economic theories and methodologies used to value oil & gas projects.

Course Content
- Petroleum economics theory based on discounted cashflow
- Key economic metrics for investment decision-making
- Engineering & geological inputs to the cash flow model
- Oil & gas pricing and forecasting
- Variation between fiscal systems across the globe

Learning Outcomes
- Engage with decision makers using their language
- Calculate the profitability of a project with confidence
- Calculate and understand the role of taxation in upstream Projects

Target Audience
Managers, Engineers, and professionals looking to develop their understanding of upstream petroleum economics theory and practice, regardless of whether they have a technical or commercial background

DURATION/Dates

3 Days	April 2-4	July 15-17
	Oct 2-4	

Course Title and Introduction

SUPPLY CHAIN MANAGEMENT IN OIL AND GAS INDUSTRY:

Supply Chain Management activities support all segments of the value chain in the oil and gas industry, from Exploration and Production to Refining and Marketing. Ensuring that the right materials and services are at the right place at the right time can have a positive impact on project success. This highly interactive course provides participants with an in depth understanding of the strategic, contractual and operational issues arising in the management of upstream oil and gas supply chains.

Course Content -
Supply Chain Management Overview
- Procurement Management
- Logistics Management
- Inventory Management

- Warehousing Management

Learning Outcomes
- Understand contracts, procurement, logistics and supply chain principles as well as the processes involved in them.
- Develop supply chain leadership skills
- Positively affect lead times, inventory, productivity and bottom-line profitability
- Manage the integration and co-ordination of activities to reduce costs and to increase efficiencies and customer service
- Gain the knowledge to effectively and efficiently manage global supply chain activities

Target Audience
Supply Chain Managers, Supervisors, Procurement specialists, Logistics & Sourcing specialists, Category Managers, Stock analysts and other professionals who work in procurement /supply chain department of oil and gas and related companies.

DURATION/Dates

5 Days	June 17-21	Sept 23-27

Course Title and Introduction

PROJECT AND CONTRACT MANAGEMENT:

This training course will equip participants with the skills and knowledge needed to excel in projects and contract management positions and effectively manage team members.

Course Content -
- Project Management Framework
- Contract planning and Pre-contract Considerations
- Project organization
- Tendering process in contract negotiation
- Project Appraisal

Learning Outcomes
- Understand Contracts
- Develop skills to effectively and efficiently manage projects and contracts
- Understand how to boost productivity, collaboration and innovation in projects and contracts

Target Audience
Contract Managers, Project Coordinators, Project Leaders, Project Managers, Project Supervisors, IT Professionals, Telecoms Engineers, Product Managers, Bankers, Consultants, Business Starters, SME Entrepreneurs, Government Contractors, Engineers, Architects.

DURATION/Dates

4 Days	May 27-30	Oct 28-31

Course Title and Introduction

PROJECT MANAGEMENT PROFESSIONAL TRAINING:

This PMP Certification training prepares participants for the Project Management Professional, Certified Associate in Project Management, and Project Risk Management certification exams conducted by the Project Management Institute (PMI).

Course Content
- Project management framework
- Project management process group
- Project integration management
- Project scope management
- Project time management
- Project cost management
- Project human resources management
- Project communication management
- Project risk management
- Project procurement management
- Project quality management
- Project Stakeholder Management
- Professional and social responsibility of project managers

Learning Outcomes
- Implement fundamental project management strategies,
- Understand how to reach desired goals and achieve those goals within specific time and cost perimeters.
- Understand the nine bodies of knowledge outlined in PMBOK® Guide, developed by the Project Management Institute (PMI).
- Understand fundamentals of project management in terms of scope, time, risk, communication, resource allocation

Target Audience
Project Coordinators, Project Leaders, Project Managers, Project Supervisors, IT Professionals, Telecoms Engineers, Product Managers, Bankers, Consultants, Business Starters, SME Entrepreneurs, Government Contractors, Engineers, Architects.

DURATION/Dates
4 Days April 8-11 July 22-25 Oct 14-17

Course Title and Introduction

PROCUREMENT IN OIL AND GAS:

This course provides participants the knowledge and skill to management procurement challenges in the oil and gas industry including highly visible spend, restricted supply-base, technical and contractual complexity, remote and difficult locations to support, and the need to operate in an environment with JV's and other risk sharing mechanisms.

Course Content
- Procurement strategic planning
- Procurement policy procedure and practices
- Procurement and contract management
- Procurement best practices

Learning Outcomes
- Organizing the spend profile
- Ways in dealing with economic uncertainties
- Questions for internal surveys to enhance purchasing performance
- How to develop a "Purchasing Coding System"
- Steps in the development of a Composite Purchase Price Index
- How to get more time to work on strategic issues
- Critical steps in negotiation planning and strategies
- To understand the elements of cost that make up a supplier's price
- Categories that should be included in a purchased materials/services strategic plan outline

Target Audience
Supply Chain Managers, Supervisors, Procurement specialists, Logistics & Sourcing specialists, Category Managers, Stock analysts and other professionals who work in procurement /supply chain department of oil and gas and related companies.

DURATION/Dates
3 Days Mar 18-20 Aug 5-7
Nov 4-6

Course Title and Introduction

CERTIFIED PROFESSIONAL IN SUPPLY MANAGEMENT TRAINING:

The Certified Professional in Supply Management® is recognized globally as a standard of excellence for professionals in procurement, supply management and supply chain management. This CPSM Certification training prepares participants for the CPSM certification exams conducted by the Institute for Supply Management (ISM).

Course Content
- Foundation of Supply Management
- Effective Supply Management Performance
- Leadership in Supply Management

Learning Outcomes
- Understand critical concepts in procurement and sourcing, negotiating, contracts and leadership.
- Enable students pass the CPSM certification exams conducted by the Institute for Supply Management (ISM).

Target Audience
Supply Chain Managers, Supervisors, Procurement specialists, Logistics & Sourcing specialists, Category Managers, Stock analysts and other professionals who work in procurement /supply chain department of oil and gas and related companies.

DURATION/Dates
4 Days May 6-9 Aug 13-16
Nov 18-21

Course Title and Introduction

HUMAN RESOURCE DEVELOPMENT IN OIL AND GAS INDUSTRY:

This course is designed to help personnel saddled with human resources and leadership and development responsibilities with the knowledge and skills to make the

right fit between the core skills of human resources development and industry requirements, so that they are more aligned to deliver greater strategic value whilst organizations are consistently improved.

Course Content
- The oil and gas value chain
- HR trends, insights and practices in the global oil & gas industry
- Manpower planning and organizational scanning for strategic fit
- Industry Best practices in HR policies and procedures
- Performance management frameworks
- Competency mapping in a skills-intensive industry
- Aligning L&D strategy to the business strategy
- Coaching and mentoring fundamentals
- Inspiring Workplace: Employee engagement frameworks
- Competency based interviewing
- High performance team cultures

Learning Outcomes
- Gain a working understanding of the oil industry, so that you are more proactive and creative in supporting operations across other departments
- Explore various HRD frameworks to achieve greater strategic fit
- Build skills for industry and organizational scanning
- Learn how to establish employee job-fit in an industry that is increasingly pressed for quality workforce.
- Be a more proactive and confident HR Partner in your organization

Target Audience
HR Managers, Administrators, Supervisors, Managers, Team Leaders, Business Owners/Executives and other professionals.

DURATION/Dates

3 Days	April 15-17	July 22-24
	Oct 14-16	

Course Title and Introduction

PETROLEUM FINANCE AND ACCOUNTING PRINCIPLES:

This course is designed to enhance the knowledge and skill of personnel who hold finance and accounting responsibilities within the Exploration &Production industry.

Course Content
- Financial terms and definitions, the language of business; accounting rules, standards, and policies
- Constructing the basic financial statements
- Classifying revenues, assets, liabilities, and equity
- Comparing different accounting elements
- Accounting for joint operations
- Accounting and reporting

Learning Outcomes
Delegates will be able to improve job performance through the understanding of current international practices in finance and accounting within the petroleum industry.

Target Audience
Financial/Accounting Personnel, Personnel new to the oil and gas accounting industry - accounting, finance, economists, others desiring to understand or refresh their knowledge of basic petroleum accounting concepts.

DURATION/Dates

3 Days	June 17-19	Sept 16-18

Course Title and Introduction

ENTREPRENEURSHIP AND VALUE CREATION IN BUSINESS ORGANIZATIONS:

In a global, knowledge-based economy, entrepreneurship and innovation are important for the creation of values and welfare. Organization's abilities to adapt and be innovative are important elements for society. This course seeks to help individuals to develop personal qualities and attitudes, impart knowledge and insight into how organizations can see opportunities and develop these in sustainable business enterprises.

Course Content
- Entrepreneurship
- Entrepreneurship and value creation
- Business Development
- Innovation
- Social entrepreneurship

Learning Outcomes
- Understand entrepreneurship within organizations

- Understand the role of entrepreneurship in developing competitive advantage
- Understand how entrepreneurship creates value

Target Audience
Top Management, CR Managers, Business Managers, other professionals and support staff involved in business development within organizations.

DURATION/Dates
3 Days May 6-8 Sept 2-4

Course Title and Introduction

ECONOMIC FRAMEWORK OF REFINING:

This course provides a complete view of all the fundamental aspects and challenges of the economic framework in which the refining industry is evolving.

Course Content
- Brief technical presentation of the main refining units: distillation, conversion, blending, etc.
- Refinery scheme evolution.
- Oil Markets and Trading
- Refining Context
- Refining Margin and Costs
- Optimization of Refining Operations – Linear Programming
- Optimization of Refinery Operations – Scheduling
- Investment Profitability Studies

Learning Outcomes
- Calculate product marginal value, refinery margins and process unit margins,
- Identify cost savings in order to improve margins,
- Simulate refinery operations and product blending,
- Simulate and optimize refinery operations, crude oil selection and product manufacturing,
- Analyze the result of a linear programming model optimization,
- Evaluate project profitability

Target Audience
Technical, operating and engineering personnel working in the refining industry, trading and commercial specialists, independent consultants, process licensors, catalyst manufacturers and refining subcontractors.

DURATION/Dates
5 Days May 13-17 Oct 21-25

Course Title and Introduction

CONTRACTS MANAGEMENT: NEGOTIATING, DRAFTING AND MANAGING CONTRACTS:

This training course focuses on how organizations can minimize exposure to risk, reduce costs and the potential for disputes by discussing the key aspects of understanding, drafting and negotiating contracts. Participants will be exposed to clear and concise drafting of contracts and how it can produce greater efficiencies and tips and techniques on effective resolution of disputes to minimize cost and reputational risk exposure to their organizations.

Course Content
- Contracts Negotiating and Drafting
- Effective Contracts Management
- Dealing with Disputes

Learning Outcomes
- Understand the contract negotiation process
- Be able to draft Specific Clauses
- Understand the importance of Effective Contracts Management and how to deal with disputes

Target Audience
Contract Managers, Project Coordinators, Project Leaders, Project Managers, Project Supervisors, IT Professionals, Telecoms Engineers, Product Managers, Bankers, Consultants, Business Starters, SME Entrepreneurs, Government Contractors, Engineers, Architects.

DURATION/Dates
3 Days Mar 11-13 Aug 5-7

Course Title and Introduction

PROJECT SCHEDULING & COST PLANNING SKILLS:

This course focuses on how to deliver reliable estimates that can result in significant savings later in the project life. To develop reliable cost and schedule estimates is one of the critical management skills that is addressed in this training course.

Course Content

- Gaining knowledge of techniques used in project estimating, from the conceptual stage to the final detailed estimate
- Understanding the different types of estimates used to accurately and progressively estimate project costs and schedule
- Identifying risk sources and minimize their impact and learn how to sustain project momentum
- Developing effective performance monitoring and control systems
- An integrated approach to scope, time, resources and cost management into a dynamic and manageable model

Learning Outcomes

- Maintain continuous project performance and delivery control
- Accurately estimate and allocate project costs and resources
- Measure, forecast and control project performance by employing earned value techniques
- Manage and mitigate schedule, cost, scope, and resource risks associated with the project
- Develop a project recovery plan for budget and schedule overruns

Target Audience

Those who have a role in various projects such as cost estimators, project schedulers, project designers, project planner, contracts professionals, project procurement and purchasing staff, and project control and business services professionals who have the responsibility for preparing cost / schedule estimates and project proposals in client and contracting companies

Those who are interested in knowing more about estimation and control in a project environment

DURATION/Dates

5 Days June 17-21 Nov 11-15

Course Title and Introduction

THE COMPLETE COURSE ON PROJECT MANAGEMENT: PROJECT MANAGEMENT SPECIALIST :

This intensive 5 Days project management training course offers complete guidance for managing any or all types of projects and will provide you with a solid foundation for best practice project management. The course explores how to ensure projects deliver outcomes which are both client-focused and organizationally relevant.

Course Content

- An introduction to the world of project management
- Project planning, scheduling and budgeting
- Project resourcing, monitoring and control
- The Project Manager's roles and responsibilities
- Project evaluation, reporting, closure and hand-over
-

Learning Outcomes

- Integrate projects within the context of the organisation
- Develop quality-focused project plans
- Monitor and control the delivery of projects
- Lead and develop effective project teams
- Maintain communication with project stakeholders

Target Audience

This training course is designed for professionals either directly or indirectly involved in the delivery of projects. It is also for those charged with a more strategic role managing project portfolios.

DURATION/Dates

5 Days July 8-12 Nov 11-15

Course Title and Introduction

THE ESSENTIALS OF CONTRACTING AND CONTRACT NEGOTIATION:

The Essentials of Contracting and Contract Negotiation is an Intensive 2-Week training course designed to help delegates develop their ability to negotiate contracts effectively. It will equip them with a range of interpersonal skills, and appreciation of the elements of planning and objective setting in negotiations. There will be an opportunity for delegates to carry out a self-assessment of their skills in key areas of negotiation including team negotiations.

Course Content

- How contracts are created and the main clauses that appear in contracts
- Alternative contracting strategies and structures
- Methods to be used in negotiating contracts
- Commercial issues arising from business agreements

written in the English language
- Negotiating contractual variations and claims

Learning Outcomes
- Understand how contracts are formed
- Explain how to use contract provisions to reduce the risk of disputes
- Understand the impact dispute may have on relationships over the long term
- Describe the use of strategies to resolve the causes of disputes
- Improve appreciation of legal issues in contracts and develop new skills in negotiation.

Target Audience

DURATION/Dates

5 Days	April 15-19	Sep 16-20

Course Title and Introduction

MANAGING CONTRACTUAL LIABILITIES :

This training will introduce indemnities and insurance to assist organisations manage risk by contractually determining the nature, content and consequences of actions and omissions by the parties involved. Contracts give rise to a range of liabilities by parties assuming rights, responsibilities, duties and obligations, but which can be managed through contractual mechanisms.
This highly interactive Managing Contractual Liabilities training course considers how your organisation can identify and manage key contractual risks and liabilities

Course Content
- Nature of contracts and contracting structures
- Principal contractual liabilities
- Managing risk through indemnities
- The purpose of insurance, types and limitations
- Using contract provisions to reduce the risk of disputes

Learning Outcomes
- Identify when a contract becomes legally enforceable
- Assess and manage key contractual liabilities
- Analyse the way indemnities operate across industries
- Evaluate the need and use of different types of insurance
- Compare ways of dealing with claims and disputes

Target Audience
Contracts Engineers, Project Managers, Procurement and Purchasing Staff, Finance and Audit Professionals, Anyone involved in the management of risk

DURATION/Dates

3 Days	June 17-19	Oct 21-23

Course Title and Introduction

THE COMPLETE COURSE ON CONTRACTS ANAGEMENT: CONTRACTS MANAGEMENT SPECIALIST:

This intensive five-day contract management training course is designed to assist contracts professionals cope with the increasing complexity of commercial and business relationships as trade becomes ever more international. All business professionals need to understand what a contract does (and does not) require them and the other party to the contract to do, and the consequences for both parties of any failure.

Course Content
- The differences in approach between different legal and contracting systems
- Risk allocation in contract management and dispute resolution in contractual disputes
- Contracting in an international context
- Protecting your company's interests

Learning Outcomes
- Improve their understanding of the role of contracts within a business
- Develop more confidence in dealing with contracting issues
- Understand how strategies can be developed to improve the commercial outcomes
- Apply the latest international thinking in dispute resolution
- Increase awareness of the use of contracts in everyday business life

Target Audience
Contract Administrators, Contract Professionals and Project Coordinators, Specifiers, Buyers, Purchasing Professionals and Procurement Officers, Contracts managers, Project managers, Engineers or contracts operatives

DURATION/Dates

5 Days July 22-26 Nov 4-8

Course Title and Introduction

VALUE ENGINEERING SKILLS: IMPROVING PERFORMANCE AND PROFITABILITY:

This Value Engineering (VE) training course is a creative, organized approach which engages project stakeholders to define their business or performance requirements, maximizes creativity and innovation to identify best value solutions, enabling more robust, effective decision-making during project planning, procurement and execution and through focusing on performance requirements and avoiding abortive work.
VE will improve the performance, profitability, quality and risk levels of the client organization and the whole project team

Course Content

- Decision making based on value criteria
- Applying cost estimating at the appropriate level
- Understanding business need, project scope, function, and performance need
- Securing real benefits by integrating VE with existing project management processes
- Introduction to powerful techniques of function analysis, facilitation and creative thinking

Learning Outcomes

- Identify value mismatches through the ratio of whole life costing.
- Capture & incorporate stakeholders' input in the development of the project charter & plan.
- Add value to stakeholders thru best value decisions based on the balance of value criteria & resources.
- Know the fundamental concepts of Value Engineering and Analysis.
- Identify alternative recommendations to the management which will improve value effectively.

Target Audience

Anyone involved in project initiation, engineering design, and critical assessment of projects
All those responsible for making significant decisions concerning plans and budgets for large and complex projects
Project or Program Sponsors, Project Managers, Cost Estimators, Cost Controllers, Engineers, Designers and Project Staff

DURATION/Dates

5 Days May 13-17 Aug 26-30

Course Title and Introduction

RISK ASSESSMENT & RISK MANAGEMENT FOR OIL & GAS PROJECTS:

This is an Oil & Gas Project Management Training Course designed for managers because of increased pressure to deliver projects on time, within budget and with the agreed components; the need to identify, manage and control the project-based risks becomes central to success. Project Managers need to use tried and accepted techniques for managing identified risks and have access to practical strategies for dealing with issues as they emerge.

Course Content

- Risk Management throughout a project life cycle
- The Risk Management Process Wheel & Identifying risk
- Risk Analysis: Qualitative and Quantitative
- Risk Responses & Managing Risks

Learning Outcomes

- Use practical steps and processes to manage project risk
- Identify threats & opportunities & weigh their relative value in a project
- Control multiple risks using limited strategies
- Overcome psychological barriers to risk in stakeholders & team members
- Evaluate risk assessment & risk management during the project closure phase of the project

Target Audience

Project Management Team members, Operations Managers, Project Managers, Oil and Gas Enterprise Architects

DURATION/Dates

4 Days May 27-30 Oct 28-30

Course Title and Introduction

PERFORMANCE MEASUREMENTS, CONTINUOUS IMPROVEMENT & BENCHMARKING:

This Management & Leadership training course presents a high-level appreciation of the features and benefits of three key Performance areas namely; Performance Measurement, Continuous Improvement and Benchmarking. Originally led by Japanese organizations, many International Companies are now leveling the field as performance measurement is seen as vital to quality process management and therefore Shareholder Value.

Course Content
- Understanding Performance Measurement
- How to instigate, prolong and measure Continuous Improvement
- How to find and decipher the good stuff
- The vital impact of people on process
- Running a Benchmarking Project

Learning Outcomes
- Explain the benefits of Performance Measurement, Continuous Improvement and Benchmarking.
- Show how these activities play a part in helping their organization perform at a higher level
- Determine methods for generating and implementing effective performance metrics
- Use a process improvement methodology back at work
- Run a benchmarking project more effectively

Target Audience
This training course is applicable to any person actively involved or contemplating performance measurement, improvement and/or benchmarking activities including; Engineers, Accountants, Operation Managers/Process Managers and HSE Leaders

DURATION/Dates
5 Days April 15-19 Aug 19-23

Course Title and Introduction

Effective Community Relations:

This training is designed to provide designated employees with the skills and knowledge to nurture and develop cordial relationship between oil companies and their host communities, assist companies carry out their mandatory social responsibilities to their host communities and enhance civic education in host communities with a view to prompting inter-ethnic harmony and peaceful co-existence.

Course Content
- The Concept of Community Relations
- Community relations and community development
- Components of community relations
- Education
- Vocational Training
- Health care
- Technology in community relations
- Environmental issues in Community Relations
- Regulatory (legal issues in Community Relations)
- Role of Stakeholders in Community Relations
- Host communities
- Oil and Gas Companies
- Local and State Governments
- Federal Government/ NDDC
- NGOs and Pressure Groups

Learning Outcomes
- Understand how to develop, sustain and utilize an outstanding community relations program
- Understand community relations challenges
- Effective communication in community relations

Target Audience
Public Relations Officers, Community Development Officers, Youth leaders

DURATION/Dates
3Days May 6-8 September 16-18

Course Title and Introduction

EFFECTIVE COMMUNICATION SKILLS FOR MANAGERIAL STAFF:

This course is designed to enable participants develop the required communication skills for Organizational management and effective decision making.

Course Content
- Communication and Organizational behaviour
- Communication Pattern and Barriers to effective

communication in the Organization
- Communication and the Petroleum Industry
- Report Writing

Learning Outcomes
- Understanding Communication and Organizational Communication behaviour
- Identify Barriers to effective communication in the Organization
- Be able to write excellent reports

Target Audience
Managers, Team Leaders, Engineers, Heads of Departments/Units, Public Officers and anyone in leadership positions desiring to effectively communicate within and without their organizations.

DURATION/Dates
2 Days April 1-2 August 5-6

Course Title and Introduction

TECHNICAL REPORT WRITING :
To ensure that participants know how to write good reports and realize the critical place of reports in organizational decision making

Course Content
- Introduction to Technical Report writing
- Functions/Uses of Reports
- Types of Reports
- Writing a good Technical Report

Learning Outcomes
- Identify various forms of technical reports
- Be able to write a good technical report
- Be able to present Technical Reports in various formats

Target Audience
Operational, Maintenance and other categories of staff that provide input for managing decision making.

DURATION/Dates
2 Days June 10-11 November 4-5

Course Title and Introduction

BASICS OF EFFECTIVE COMMUNICATION :

To make participants realize the critical relevance of communication between them and other categories of staff in the organization.

Course Content
- Basic concepts and procedures in communication
- Effective sentence construction
- Interpersonal communication
- Functions / Uses of Reports

Learning Outcomes
- Understand communication concepts and procedures
- Improve verbal written communication skills
- Understand human behavior and how to relate with colleagues
- Be able to write professional Minutes of Meetings

Target Audience
Operators, Foremen and Officers that report to Supervisors, Managers and other categories of lower level Managerial staff

DURATION/Dates
2 Days July 1-2 October 14-15

Course Title and Introduction

INTEGRATED LOGISTICS TRAINING:

Integrated Logistics Support Training covers many aspects of unified and iterative approach to the management and technical activities for operational and materiel requirements and design specifications for logistics support. ILS involves structured and systematic management of technical process to integrate needs for logistic support into the design of a system or equipment throughout its life cycle. The training covers the process by which all elements of logistic support are planned, acquired, tested, and provided in a timely and cost-effective manner.

Course Content

- Integrated Logistics support (ILS) program and concepts
- Reliability, Availability and Maintainability concepts
- Logistics Optimization
- ILS Cases

Learning Outcomes

- To understand all integrated logistic support elements.
- To understand the concept of ILS
- To understand and apply the Reliability,
- availability and maintainability concept in logistic analysis
- To understand the concept of integrated logistic support applied through-out the asset life cycle.
- To understand the optimization concept.
- To model the asset logistic considering the flow of equipment between suppliers and producers.
- To understand the preventive maintenance best interval definition to minimize the LCC and maximize the operational availability.
- To understand the inspection best interval definition to minimize the LCC and maximize the operational availability.
- To understand the spare part minimum level definition to minimize the LCC and maximize the operational availability.
- To understand the resources minimum level definition to minimize the LCC and maximize the operational availability.
- To perform sensitivity cases to compare different scenario results.

Target Audience

This training course is designed for professionals either directly or indirectly involved in providing logistics support within organizations or on the delivery of projects. It is also for those who desire to gain understanding of structured and systematic management of technical process to integrate needs for logistic support

DURATION/Dates

3 days July 8-10

INFORMATION TECHNOLOGY MANAGEMENT PROGRAMS

PERSONNEL SKILL UPGRADE FOR ORGANISATIONAL GROWTH

INFORMATION TECHNOLOGY MANAGEMENT PROGRAMS

PERSONNEL SKILL UPGRADE FOR ORGANISATIONAL GROWTH

Course Title and Introduction

DATA PROCESSING AND ANALYSIS:

To improv the competence of officers in data processing and analysis.
To impact knowledge of interpretation of data for decision making.

Course Content
- Data processing in modern organizations.
- Techniques of data processing
- Data gathering, assembling, sorting, coding and analysis
- Measures of central tendency
- Measures of dispersion
- Correlation and Regression
- Data analysis software
- Statistical Package for the Social Sciences
- Excel Charts and tables
- Data Analysis and Decision Making

Learning Outcomes
- Understand the Concept of data
- Utilize modern techniques of data processing
- Understand tools of data analysis
- Identify and utilize data analysis software
- Be able to use Excel Charts and tables for analyzing data
- Understand the role of data Analysis in decision making

Target Audience
Staff responsible for handling data in organizations and other interested professionals

DURATION/Dates
5 days April 1-5 Aug 5-9

Course Title and Introduction

APPLICATION OF THE INTERNET IN MODERN TECHNOLOGY:

To describe the usefulness of the internet in our society

Course Content
- Description of the internet
- Components of the internet
- Benefit of the internet
- Disadvantages of the internet
- Understanding the world wide web
- The search Engines
- How to search for information on the internet

Learning Outcomes
- Understand the importance of the internet in modern organizations
- Understand how to safely use the internet
- Understand the role of internet in modern technology

Target Audience
Managers, Engineers, Technicians, Technologists, and other interested professionals

DURATION/Dates
5 Days April 15-19 Nov 4-8

Course Title and Introduction

COMPUTER APPRECIATION FOR SECRETARIAL STAFF:

To create computer awareness and to make the participants appreciate the importance of computer in our society. In addition, this course will enable the participants to be able to do word processing jobs.

Course Content
- Definitions of a computer
- Parts of a computer
- Input / Output devices
- Computer virus

- The Microsoft Word Environment
- Typing text
- Editing text
- Formatting text
- Inserting symbols, date, time and page number
- Opening and closing a file
- Working with header and footers
- Working with tables and charts
- The mail merge

Learning Outcomes
- Understand the various parts of a computer
- Identify and masterfully use Microsoft Word
- Understand email use and ethics

Target Audience
Secretaries and other categories of staff who wish to use word processing applications for their Work

DURATION/Dates
5 Days June 17-21 Sept 9-13

Course Title and Introduction

SYSTEM MAINTENANCE & PC MAINTENANCE:

Participants will be introduced to a career in the ICT sector and will learn about maintenance, repair and troubleshooting of PC's and Computer systems. They will also learn about installing different operating systems and application software's and the basics of computer networks.

Course Content
- Fundamentals of Computing Systems & Customer Care
- Computer Hardware & Components
- HSE while working with PC Hardware
- Software Installation / Upgrade
- Troubleshooting Hardware devices & Peripherals
- Configuring / Cloning System Units
- Technical Fault Analysis
- Qualities of IT Repair Personnel
- Scheduling Planned Maintenance
- Stores Requisitioning, Stock control & Purchasing

Learning Outcomes
- Gain practical hands-on knowledge and skill in troubleshooting and maintenance of PC hardware components
- Understand how to efficiently use computing systems

Target Audience
Graduates looking for their first role in the ICT industry, Professionals looking for a change in career, IT Professionals, System Engineers, Hardware Technicians and Engineers

DURATION/Dates
4 Days June 17-20 Nov 4-7

Course Title and Introduction

BIG DATA ANALYTICS

- Web Design and Development
- Digital Marketing
- Cisco Networking
- Server Administration
- CompTIA Security +
- CompTIA Network +
- CompTIA A+
- Adobe Photoshop Raster Graphic Design For Beginners
- ADOBE ILLUSTRATOR Vector Graphic Design For Beginners
- Piping Design Management System (PDMS)

The courses are categorized under the following fields in IT:
- 5th Generation Computing
- The Web and Mobile Applications
- Hardware and Networking
- Graphic Design
- Computer Aided Design
- 5th Generation Computing

Big Data Analytics
In two words, this involves Data Management and Data Forecasting. It is a field of data science which deals with the use of advanced analytic techniques against very large, diverse data sets (structured or unstructured) in order to derive information that guide critical decision making by governments, agencies, organizations, etc.
Big Data Analytics is a necessary skill applied in Official Government Statistics, Artificial Intelligence, Data Engineering, Business, etc.

Course Content

- ✓ What is data analytics, Big data and Big data analytics?
- ✓ Data formatting
- ✓ Storing, processing and analysing big data
- ✓ Big data analytics and Risk management
- ✓ Big data in production and Innovation Company
- ✓ Big data analytics in E-Commerce
- ✓ A real life example of big data analytics in various companies
- ✓ Tools used in Big data analytics

How to use Jupyter Notebooks for reading data SQL, CSVs, APIs etc.

Learning Outcome

At the end of this course, the participants will be able to:
Gather and interpret real-time data of events and conditions like traffic, weather and condition of products to achieve elimination of down-time and increase damage control in logistic operations
Make informed guesses and speculations in specific fields like pricing and manufacturing through monitoring certain factors and variables that affect the final outcome
Detect fraud, potential cybercrimes and audit trails by analyzing past data, examining previous cases and even predict scenarios
Determine target-audience advertisements by gathering and analyzing data about consumer behavior and patronage

Duration: 3 days
Feb. 2-4, May 4-6, Oct. 5-8

Course Title and Introduction

THE WEB AND MOBILE APPLICATIONS

Web Design and Development

It refers to both the aesthetic portion of a website and its usability. Web designers make use of tools such as HTML, CSS and JavaScript for building the frame work of the website. On the other hand, web development focuses on the functionality of the website such as its interaction with a remote database or application.

Course Content

FULL STACK WEB DEVELOPMENT
(Front End and Back End)

- ✓ Web contents management system (WCMS).
- ✓ The essential building blocks of a websites
- ✓ Login/Registration page structuring
- ✓ Database modulation/Structuring
- ✓ Creating, Reading, Updating and Deleting data from database (CRUD).
- ✓ Web Security (SSL)
- ✓ How to connect web page to a database
- ✓ How to deploy web page into server (Hosting)

How to build a Company web site, school web site, business blog, YouTube media, etc

Learning Outcome

At the end of this course, the participant will be able to:

- ✓ Manage the content of a website through Web Content Management System to improve search engine optimization
- ✓ Master the use of the essential building blocks of a website with fast loading web pages
- ✓ Produce simple web animation clips to improve branding
- ✓ Build faster mobile development at lower cost to the organization

Duration: 3 days Feb. 9-12, June 15-18, Oct. 12-15

Course Title and Introduction

DIGITAL MARKETING

We teach the act of promoting and selling products and services online by leveraging online marketing tactics such as social media marketing, search marketing, and email marketing with the use of computer devices like laptops, desktops, mobile phones etc.

Course Content

- ✓ Basic Introduction & Dashboard Setup
- ✓ Market Research
- ✓ Email Marketing
- ✓ Copywriting
- ✓ Search Engine
- ✓ Optimization (SEO)
- ✓ YouTube Marketing
- ✓ Facebook Marketing
- ✓ Twitter Marketing
- ✓ Instagram Marketing
- ✓ Google Analytics & Ads

Learning Outcome

At the end of this course, the participant will be able to:

- ✓ Set up a market on various online and social media platforms like Instagram, Facebook, Twitter, YouTube, Email, etc. for wider reach of products and services
- ✓ Conduct and analyze a research survey with Google Forms as a feedback mechanism from customers and clients
- ✓ Know how to grow a business on the ground through the application of tools such as Competitor Analysis, Magnetic Headlines, YouTube Marketing Strategy and Account Optimization

Duration: 2 days

March 2-3, July 6-7, Oct. 26-27

Course Title and Introduction

HARDWARE AND NETWORKING

Cisco Networking

CCNA is a popular certification among computer network engineers. CCNA is Cisco Certified Network Associate. It is a certification program valid for all types of engineers. It includes entry-level network engineers, Network Administrators, Network Support Engineers and Network Specialists.

A CCNA expert has the responsibility of installing, configuring, and even testing the networks installed in the firm.

The CCNA certificate covers a broad range of networking concepts. It helps candidates to prepare for the latest network technologies they are likely to work on.

Course Content

- ✓ Part I – General Networking Concepts
- ✓ Part II – The Cisco IOS
- ✓ Part III – Routing
- ✓ Part IV – VLANs, Access-Lists, and Services
- ✓ Part V – WANs

Learning Outcome

At the end of this course, the participant will be able to:

- ✓ Design, configure and troubleshoot an enterprise network
- ✓ Prepare for the latest network technologies they are likely to work on

Duration: 5 days

March 8-12, June 21-25, Nov. 1-5

Course Title and Introduction

SERVER ADMINISTRATION

This course is part one in a series of three courses that provides the skills and knowledge necessary to implement a core Windows Server 2012 infrastructure in an existing enterprise environment. The three courses collectively cover implementing, managing, maintaining and provisioning services and infrastructure in a Windows Server 2012 environment. Although there is some cross-over of skills and tasks across these courses, this course focuses on the initial implementation and configuration of core services, such as Networking, Storage, Active Directory Domain Services (AD DS), Group Policy, File and Print Services, and Hyper-V.

Course Content

- ✓ Deploying and Managing Windows Server 2012
- ✓ Introduction to Active Directory Domain Services
- ✓ Managing Active Directory Domain Services Objects
- ✓ Automating Active Directory Domain Services Administration
- ✓ Implementing Dynamic Host Configuration Protocol
- ✓ Implementing DNS
- ✓ Implementing IPv6
- ✓ Implementing Group Policy
- ✓ Implementing Server Virtualization with Hyper-V

Learning Outcome

At the end of this course, the participant will be able to:

- ✓ Install and configure Windows Server 2012, including Windows Server 2012 R2 on an enterprise network server
- ✓ Implement a core Windows Server 2012 infrastructure in an existing enterprise environment
- ✓ Automate software installation simultaneously on multiple computer systems and execute group policies on them centrally from one remote server

Duration: 3 days

Feb 23-25, June 15-17, Nov. 9-11

Course Title and Introduction

COMPTIA SECURITY+

The CompTIA Security+ course is designed to teach students security basics and prepare them for testing to become

Security+ certified. The Security+ covers many vendor neutral topics including different types of threats and attacks, networking technologies and tools, secure design and architecture, identity and access management, risk assessment and management, and finishes up with Cryptography and Public Key Infrastructure.

Course Content

- ✓ General Security Concepts
- ✓ Infrastructure and Connectivity
- ✓ Monitoring Activity and Intrusion Detection
- ✓ Implementing and Maintaining a Secure Network
- ✓ Securing the Network and Environment
- ✓ Cryptography Basics, Methods, and Standards
- ✓ Security Policies and Procedures
- ✓ Security Administration
- ✓ Security Administrator's Troubleshooting Guide

Learning Outcome

At the end of this course, the participant will be able to:

- ✓ Protect an organization's network from threats, attacks and vulnerabilities
- ✓ Detect various types of compromise and have an understanding of penetration testing and vulnerability scanning concepts
- ✓ Install, configure, and deploy network components while assessing and troubleshooting issues to support organizational security
- ✓ Install and configure wireless security settings and implement public key infrastructure

Duration: 2 days April 6-7, Sept 7-8

Course Title and Introduction

COMPTIA NETWORK+

The Network+ course provides basic training in managing, maintaining, troubleshooting, installing and configuring a network infrastructure. Nine months of experience in network support or administration along with a CompTIA A+ certification is recommended before the Network+ course. Network+ certification is also a step towards attaining higher level vendor specific certifications such as Microsoft (MCSE, MCITP), Cisco (CCNA, CCNP) and Linux (Linux+, RHCE).

Course Content

- ✓ History of Networking
- ✓ How Networks Operate
- ✓ Peer-to-Peer versus Client/Server
- ✓ Network Types and Topologies
- ✓ Segmentation and Routing
- ✓ Protocols
- ✓ TCP/IP
- ✓ Name Resolution and Services
- ✓ Wide Area Networks (WANs)
- ✓ Remote Access
- ✓ Making Internet Connections
- ✓ Review and Conclusion

Learning Outcome

At the end of this course, the participant will be able to:

- ✓ Design and implement functional networks as well as configure, manage, and maintain essential network devices
- ✓ Identify benefits and drawbacks of existing network configurations
- ✓ Implement network security, standards, and protocols
- ✓ Support the creation of virtualized networks

Duration: 2 days
March 9-10, August 10-11

Course Title and Introduction

COMPTIA A+

The A+ credential is among the Best Computer Hardware Certifications 2018. This is due to the fact that it covers many basic principles of computing and is suitable for professionals who are looking for a certification to get their entry-level IT job or that would like to give their career a boost. So if working with technology sounds interesting and you're fancying a computer technician career, then the CompTIA A+ designation might be the right choice as one of the best-recognized credentials for tech support personnel.

Course Content

- ✓ Troubleshooting
- ✓ The Open Systems Interconnection Specifications
- ✓ Computer Power Supplies
- ✓ Memory
- ✓ Computer Expansion
- ✓ Input-Output Devices
- ✓ Operating Systems
- ✓ Networking Basics
- ✓ Virtualization and Cloud Computing

- ✓ Mobile Devices
- ✓ Security Principles
- ✓ SOHO Network
- ✓ Operational Procedures

Learning Outcome

At the end of this course, the participant will be able to:

- ✓ Identify, use, and connect hardware components and devices
- ✓ Install and support Windows OS including command line & client support.
- ✓ Understand Mac OS for Apple systems, Linux and mobile OS
- ✓ Troubleshoot pc and laptop issues including application security support
- ✓ Identify and protect against security vulnerabilities for devices and their network connections
- ✓ Compare & contrast cloud computing concepts & set up client-side Virtualization
- ✓ Follow best practices for safety, environmental impacts, and communication and professionalism

Duration:

3 days Feb 9-11, June 1-3, Nov 16-18

Course Title and Introduction

GRAPHICS DESIGN

Adobe Photoshop Raster Graphic Design For Beginners
Graphic Designers create visual concepts that inspire, inform, and transform, using industry-leading tools to build innovative design projects and discover the skills needed to become an in-demand visual thinker and communicator.

Course Content

- ✓ Introduction to Graphic Design
- ✓ Move Tool & Artboard
- ✓ Overview of the Selection Tools
- ✓ Understanding Layers
- ✓ Healing Brush Tool, Patch Tool, Content Aware Tool, Red Eye Tool
- ✓ Colour Picker, Ruler Tool & the Note Tool
- ✓ Brushes, Pencil and Clone Stamp
- ✓ History Brushes, History Panel & Erasers
- ✓ Gradients & Paint Bucket
- ✓ Path Selection and Direct Selection
- ✓ Working with Type
- ✓ Projects

Learning Outcome

At the end of this course, the participant will be able to:

- ✓ Create art boards and work with layers
- ✓ Utilize tools such as cropping, slicing and framing to transform images
- ✓ Create foreground colour and background colour as well as replace and mix colours
- ✓ Make history paintings, navigate history and use background eraser
- ✓ Explore shapes scale them to proportion and tinker with their properties

Duration: 3 days

Mar 23-25, July 13-15, Nov 23-25

Course Title and Introduction

ADOBE ILLUSTRATOR VECTOR GRAPHIC DESIGN FOR BEGINNERS

Graphic Designers create visual concepts that inspire, inform, and transform, using industry-leading tools to build innovative design projects and discover the skills needed to become an in-demand visual thinker and communicator.

Course Content

ADOBE ILLUSTRATOR VECTOR GRAPHICS DESIGN

- ✓ Basic Introduction & Dashboard Setup
- ✓ Move Tool & Direct Selection Tool
- ✓ Magic Wand Tool & Lasso Tool
- ✓ Understanding Layers
- ✓ Shape Tools and Pathfinder
- ✓ Brushes, Pencil, Eraser
- ✓ Puppet Warp and Free Transform Tool
- ✓ Meshes, Gradients and the Eye Dropper Tool
- ✓ Understanding Types of Logo Designs
- ✓ Projects

Learning Outcome

At the end of this course, the participant will be able to:

- ✓ Easily convert a raster image into a vector image using the Image Trace tool
- ✓ Use illustrator to create both print and web graphics
- ✓ Turn images to vector graphic

Duration: 3 days Feb 16-17, June 22-23, Oct 26-27

Course Title and Introduction

MOTION GRAPHIC DESIGN

Motion graphic design also known as animated designs is a subset of graphic design.
It uses graphic design principles in producing video ads, filmmaking or video production through the use of animation or filming techniques.
We teach on how to design animations in unique ways using 'Adobe After Effects' and create compositions, visual effects, audio, layered compositions, masking etc.

Course Content
MOTION GRAPHICS DESIGN
- ✓ Creating Your First AE Video
- ✓ Essential Motion Graphics Techniques
- ✓ Smoothing Your Animations
- ✓ Important Techniques for Better Animation
- ✓ Complex and Compound Shapes
- ✓ Per Character Animation
- ✓ Time Games
- ✓ Magic of Blending Modes
- ✓ Distorting Animating Objects Images
- ✓ The World of Expressions

Learning Outcome
At the end of this course, the participant will be able to:
- ✓ Create animations and digital footage for multimedia projects
- ✓ Design explainer videos for business organizations

Duration: 2 days
March 30-31, July 13-14, Nov 2-3

Course Title and Introduction

COMPUTER AIDED DESIGN (CAD)

PLANT DESIGN AND MANAGEMENT SYSTEM (PDMS)

It is a 3D design software solution that avails the facilities of delivering high-end capable projects of piping and plants. PDMS consists of a standard modern library that enables the user to reuse the design that already existed; thus saving energy and time. It also helps in the generations of drawings and reports picked up directly from the PDMS database.
This course is ideal for draftsmen, mechanical, chemical/process, civil and electrical engineers willing to improve learn and enhance their software and interpretation skills about 3D plant designing.

Course Content
- ✓ Basic
- ✓ General Utility
- ✓ Equipment Creation
- ✓ Equipment Modification
- ✓ Pipe Work Modelling
- ✓ Modify Pipe Routing
- ✓ Pipe Routing Checking
- ✓ Beams and Columns
- ✓ Panels and Plates
- ✓ Wall and Floor
- ✓ ASC MODELLER
- ✓ Hangers and Supports
- ✓ HVAC

Cable Tray

Learning Outcome
At the end of this course, the participant will be able to:
- ✓ Design plant facilities working model in 3D with accurate dimensions
- ✓ Save up to 30% material cost in comparison to manual calculation methods
- ✓ Avoid pipe clashes, lack of space, fittings problem and other issues in the plant design
- ✓ Calculate the exact quantity of materials to be used in the plant so that no extra quantities are ordered. It can also generate Material Take Off (MTO)

Duration: 3 days
April 6-8, July 27-29, Nov 16-18

Health Safety and Environment Programs

Health Safety and Environment Programs

ADVANCED HSSE PRINCIPLES & PRACTICES:
Incorporating good leadership skills HSSE brings together three fields of expertise, all of which come under the auspices of an Integrated Management System. To ensure that you are part of this continued successful approach attendance of this advanced training course is essential and will provide you with the new competencies required to lead in this demanding combined field.

Course Content
- Leadership Safety Excellence
- Roles, Responsibilities, Accountability and Authority
- Organisational and Environmental Risk, Threats and Impact Perspectives
- Incident & Accident Investigations & Reporting
- Emergency Preparedness, Response and Business Resilience & Recovery
- Security Management, protection of people, assets, reputation & data
- Plan, Do, Check, Act (PDCA) cycle for continual improvement

Learning Outcomes
- Design new leadership traits that can and will make the difference
- Develop the necessary communication skills to work with all stakeholders
- Develop rational problem solving and decision-making skills for emergencies
- Develop the knowledge and skills required to investigate all adverse events
- Enhance your Safety and Security Management leadership skills

Target Audience
Offshore/Onshore Installation Managers, Facilities Engineers, HSE Officers/Engineers, personnel in oil and gas industry

DURATION/Dates
5 Days May 6-10 August 5-9

Course Title and Introduction

SAFETY LEADERSHIP IN THE OIL AND GAS INDUSTRY:

This course introduces the concept of leadership in managing health and safety within organizations. Managerial roles in driving and ensuring health and safety compliance is explained and structures to guarantee same broken down for easy understanding.

Course Content
- HSE – MS
- Legal, financial and moral reasons for good HSE Management
- Introduction to behavioral based Safety
- The role of the manager in HSE Management

Learning Outcomes
- Understand the HSE Management System
- Understand why organizations must maintain robust HSE Management systems
- Understand leadership roles in HSE Management

Target Audience
Offshore/Onshore Installation Managers, Facilities Engineers, HSE Officers/Engineers, personnel in oil and gas industry

DURATION/Dates
3 Days April 9-11 September 2-4

Course Title and Introduction

PROCESS SAFETY MANAGEMENT:
This course is designed to meet provide participants with the knowledge of hazards in process facilities and the need for safe design, engineering and operation of process units and equipment so that they do not fail and cause catastrophic events such as loss of containment. Participants will be skilled to identify process hazards and differentiate them from personal/occupational safety hazards.

Course Content
- Introduction to Process Safety
- Process safety vs personal safety
- PSM in offshore and onshore facilities
- Elements of Process Safety Management

Learning Outcomes
- Understand Process Safety Management
- Understand the 13 elements of a PSM program
- Engage in practical exercises in analyzing process safety related accidents in oil and gas

Target Audience
Offshore/Onshore Installation Managers, Facilities Engineers, HSE Officers/Engineers, personnel in oil and gas industry

PRICE: N 120,000

DURATION/Dates
3 days June 17-19 October 14-16

Course Title and Introduction

FUNCTIONAL SAFETY ENGINEER TRAINING:

This course provides an overview of process industry safety engineering from the point of view of the Risk Analyst, Process Safety Coordinator, and Control Systems Design Engineer.
It delivers a complete overview of the functional safety lifecycle. The course reviews Process Hazard Analysis (PHA), Consequence Analysis, Layer of Protection Analysis (LOPA), Safety Integrity Level (SIL) Target Selection, Safety Requirements Specification (SRS) generation, failure rates, device and system reliability, SIF verification, SIF detailed design and Operations requirements.

This course forms a broad review in preparation for the Certified Functional Safety Expert (CFSE) and Certified Functional Safety Professional (CFSP) process industry application engineering exams.

Course Content
- Introduction to Safety Instrumented Systems
- Principles of Risk Management
- The Safety Lifecycle
- Process Hazard Analysis (PHA)
- Consequence Analysis
- Likelihood Analysis
- Layer of Protection Analysis (LOPA)
- Tolerable Risk
- SIL Target Selection
- Safety Requirements Specification
- Safety Instrumented Systems (SIS) failure
- From failure rate to SIL
- Single devices to system
- Redundant Architectures
- Requirements to SIF
- SIF Design and Verification in the Safety Lifecycle
- SIF Detail Design
- Operations

Learning Outcomes
- Understand SIS in risk management
- Be able to perform a PHA
- Be able to carry out Consequence Analysis and LOPA
- Understand SIF design, applications and operation
- Understand Safety in Design (SID)

Target Audience
Process Safety engineer
Control engineer
Reliability engineer
Engineering/Operations management
Plant risk analysts
Loss prevention professionals
CFSE and CFSP Process Application candidates
Request On-Site Training Pre-Register for Public Course

DURATION/Dates
4 days June 24-27 November 18-21

Course Title and Introduction

ACCIDENT PREVENTION AND CONTROL:

This course is designed to meet the skill requirements of personnel working in oil and gas industry who will be required to develop systems for the prevention and control of accidents/incidents in the workplace. Participants will be exposed to accident causation theories and methods for preventing accidents in the workplace.

Course Content
- Accidents, incidents and Near misses
- Anatomy of accidents and accident analysis
- Accident causation theories
- Accident prevention techniques
- Hazard Identification and Risk Assessment
- Hierarchy of Controls

Learning Outcomes
- Differentiate between accidents, incidents and near misses
- Carry out anatomy of accidents and understand accident causation theories
- Be able to identify hazards and carry out simple risk assessments using a simple risk matrix
- Understand the hierarchy of controls and its application in managing risk

Target Audience
Engineers, HSE Professionals, Offshore/Onshore Personnel, Managers and Supervisors, regulators/regulatory bodies, personnel in oil and gas and other allied industries

DURATION/Dates

3 days	April 1-3	June 24-26
	Oct 28-30	

Course Title and Introduction

INCIDENT INVESTIGATION AND ROOT CAUSE ANALYSIS (USING 5 WHY AND WHY TREE):

This course is designed to meet the skill requirements for personnel with the responsibility of investigating work-related accidents/incidents in the workplace using the Root Cause Analysis method. It provides practical hands-on experience in investigating case studies and incidents in the workplace.

Course Content
- Accident Causation Theories
- Why investigates accidents?
- Introduction to RCA
- Practical demonstration of an accident investigation using 5 Why and Why Tree Analysis

Learning Outcomes
- Differentiate between accidents, incidents and near misses
- Carry out anatomy of accidents and understand accident causation theories
- Understand reasons for reporting and investigating accidents
- Understand Root Cause Analysis as an incident investigation tool
- Be able to use Why Tree and 5 Why in investigating accidents, incidents or near misses

Target Audience
Project Managers/Engineers, Construction Managers/Engineers, HSE Managers/Engineers/Officers, Onshore/Offshore Installation Managers and personnel with responsibilities of investigating incidents in the workplace.

DURATION/Dates

3 days	May 6-8	Aug 5-7	Nov 4-6

Course Title and Introduction

MANAGING HEALTH AND SAFETY IN THE WORKPLACE:

This course will provide managers/supervisors with HSE roles/responsibilities in the workplace the skill and knowledge to develop company's occupational/Industrial safety, health and welfare management system and comply with its legal duties.

Course Content
- What is HSE?
- Reasons for Managing HSE
- Hazard Identification and Risk Management
- HSE Management Systems (OHSAS 18001 Model)

Learning Outcomes
- Understand Employer and Employee Responsibilities in Managing HSE
- Be introduced to OHSAS 18001 HSE MS
- Understand how to develop hazard identification and risk assessment programs in an organization

Target Audience
Project Managers/Engineers, Construction Managers/Engineers, HSE Managers/Engineers/Officers.

DURATION/Dates

3 days	May 20-22	Aug 26-28	Oct 14-16

Course Title and Introduction

CONSTRUCTION RISK REDUCTION IN OIL AND GAS:

The construction industry is considered very critical and hazardous. Organizations have discovered that failure to understand these hazards and risks have also affected company financial performance in the long run. This course provides participants with the skill and knowledge to identify, analyze and develop control measures for construction related hazards and risks.

Course Content
- Construction in Oil and Gas
- Oil and Gas Construction Hazards
- Risk Analysis and Controls
- Contractor/Sub-Contractor Management
- Health and Safety in Construction Projects

Learning Outcomes
- Understand HSE risks in the construction industry
- Understand construction risk reduction principles
- Develop skills for contractor management in a construction environment
- HSE principles for construction work activities

Target Audience
Project Managers/Engineers, Construction Managers/Engineers, HSE Managers/Engineers/Officers, personnel with responsibilities within construction projects in oil and gas.

DURATION/Dates
3 days April 15-17 August 5-7

Course Title and Introduction

HSE REGULATORY COMPLIANCE FOR MANAGERS IN OIL AND GAS:

This course is designed for managers. It provides background of key International requirements; introduce participants to Nigerian legal provisions and what the Law expects from employees. Participants will understand safety and environmental legislations, regulations, policies and requirements to ensure companies comply and avoid litigation.

Course Content
- Introduction to HSE Management
- International HSE Laws
- Sources of Nigerian Laws
- HSE Laws in Nigeria
- Understanding the Petroleum Act and Mineral Oil Safety Regulations (MOSR)

Learning Outcomes
- Understanding HSE Management
- Understand international requirements for HSE management
- Understand HSE regulatory requirements
- Understand HSE Laws in Nigeria

Target Audience
HSE Managers, HSE Professionals, Environmental Specialist, Regulatory and Compliance Managers, Company Directors/Managers.

DURATION/Dates
2 days April 1-2 July 1-2 Nov 4-5

Course Title and Introduction

FIRE MARSHALL TRAINING

Leading to Certified Fire Marshal:
This course is designed for personnel who are responsible for preventing losses related to fire incidents. It will provide opportunities to develop elements of critical thinking and general problem-solving skills to an advanced level. Exemplifying, analyzing and evaluating the potential and actual impact of fires in the workplace.
Participants will be expected to successfully complete a competency test at the end of the training.

Course Content
- Introduction to Loss Prevention
- Chemistry of Fire
- Who is a Fire Marshall?
- Theories of Fire Spread
- Fire Classification
- Fire Prevention Techniques
- Practical Demonstration of firefighting using portable fire extinguishers
- Fire Engineering in the built environment

Learning Outcomes
- Understand the Chemistry of fire and fire science
- Understand mediums of fire spread and `prevention techniques
- Understand fire suppression methods and equipment
- Understand fire detection equipment and methods
- Use of portable fire extinguishers
- Understand fire engineering in the built environment
- Fire fighting methods and techniques

Target Audience
Loss Prevention Specialists/Managers, Safety Officers, Engineers, Fire Marshalls and other oil and gas professionals interested in being certified as Fire Watch or Fire Marshall.

DURATION/Dates
5 days April 15-19 Oct 21-25

Course Title and Introduction

FIRE WATCH TRAINING

Leading to Certified Fire Watch:
This course is designed for personnel who are responsible for watching for potential hazard scenarios that could lead to fire incidents during welding, confined space entry and other activities. Participants will be expected to successfully complete a competency test at the end of the training.

Course Content
- Chemistry of Fire
- Who is a Fire Watch?
- Theories of Fire Spread
- Fire Classification
- Fire Prevention Techniques
- Practical Demonstration of firefighting using portable fire extinguishers
- Confined Space Entry and Hazardous Atmospheres
- Use of portable gas detection equipment

Learning Outcomes
- Understand the Chemistry of fire and fire science
- Understand mediums of fire spread and prevention techniques
- Understand fire suppression methods and equipment
- Understand fire detection equipment and methods
- Use of portable fire extinguishers
- Understand confined space entry risks and entry watch requirements

Target Audience
Loss Prevention Specialists/Managers, Safety Officers, Engineers, Fire Marshalls and other oil and gas professionals interested in being certified as Fire Watch or Fire Marshall.

DURATION/Dates
5 days April 15-19 Oct 21-25

Course Title and Introduction

RISK REDUCTION AND ALARP DEMONSTRATION IN OIL AND GAS:

This course is designed to provide participants the skill to through reasoned and supported arguments, show that all practical measures that can be reasonably implemented have been implemented to reduce the risk for Safety Critical Events (SCEs) in the workplace, adopted control measures will collectively eliminate and/or reduce the risk to As Low As Reasonably Practicable (ALARP) levels and identify suitable approach to be employed in providing evidence of ALARP demonstration.

Course Content
- What is ALARP in Oil and Gas?
- Legal Context of ALARP
- Quantitative Risk Assessment and Cost Benefit Analyses
- Practical Demonstration of ALARP using structured methodology
- Risk reduction hierarchy
- ALARP criteria
- Demonstrating risk

Learning Outcomes
- Identify different options available for risk reduction (control hierarchy)
- Decide when risk reduction measures can best be used
- Describe the concepts of “tolerability of risk” and “As Low As Reasonably Practicable (ALARP)”
- Apply the ALARP concept and conduct an ALARP assessment to an appropriate level of detail

Target Audience
Risk Managers, Safety Managers, Offshore/Onshore Installation Managers, Safety Officers/Professionals, Company Directors/Managers, Loss Prevention Supervisors, Engineering Managers and other Oil and Gas Professionals seeking knowledge in the field.

DURATION/Dates
3 days March 4-6 November 4-6

Course Title and Introduction

FUNDAMENTALS OF INDUSTRIAL HYGIENE:
Participants will develop understanding of industrial hygiene terminology, principles and practices. The key processes in an effective industrial hygiene effort; anticipation, recognition, evaluation and control will be explained and taught in an easy to comprehend manner. Participants will also be familiarized with chemical, physical, ergonomic and biological hazards in the workplace.

Course Content
- Occupational Health Exposures in the workplace
- Industrial hygiene needs analysis
- Basic anatomy and physiology associated with routes of entry and toxicology
- Emerging trends in combustible dust, hexavalent chromium, flavorings-related lung disease, bioterrorism, nanotechnology and pandemic influenza
- Introduction to monitoring equipment and exposure limits

Learning Outcomes
- How to distinguish chemical, physical, ergonomic and biological hazards
- How to conduct an industrial hygiene needs analysis
- Hazard evaluation techniques
- Identify monitoring equipment and exposure limits

Target Audience
Industrial Hygiene Professionals, Occupational Health Professionals, Safety Managers, Offshore/Onshore Installation Managers, Safety Officers/Professionals, Company Directors/Managers, Loss Prevention Supervisors, Engineering Managers and other Oil and Gas Professionals seeking knowledge in the field.

DURATION/Dates
5 days June 17-21 September 16-20

Course Title and Introduction

QUALITY CONTROL IN INDUSTRIES:
Companies under contract or subcontract to the federal government or other companies are required to take elaborate measures to assure product quality and reliability. This course provides participants the skill and knowledge to assure product quality and reliability in industries with focus on ISO 9001.
- Introduction to Quality Management and Control
- Understand Requirements of Quality Management System (ISO 9001) and Implement
- Plan, Perform and Report Quality Management System Audits
- Understand quality management principles
- Understand ISO 9001)
- Understand the Plan, Do, Check and Act Cycle
- Be able to conduct a quality management audit
- Quality Managers, HSE Managers, Supervisors/Team Leads, Directors/Managers, and other professionals interested in quality management techniques.

DURATION/Dates
3 days May 6-8 November 18-20

Course Title and Introduction

FOOD SAFETY AND HYGIENE:
This course is designed for food manufacturers and handlers to identify and control food safety hazards. Participants will understand requirements for a food safety management system and what an organization needs to do to demonstrate its ability to control food safety hazards to ensure that food is safe.

Course Content
- Introduction to Food Safety and Hygiene
- Hazard Analysis Critical Control Points (HACCP)
- ISO 22000 (Food Safety Management System)
- Personal Hygiene
- Food Safety Legislations/Regulations

Learning Outcomes
- Understand food hygiene requirements

- Understand HACCP techniques and principles
- Understand ISO 22000
- Understand personal hygiene requirements to prevent OH exposures

Target Audience
Catering Managers/Contractors/Supervisors, Food Handlers, Safety Officers/Engineers, Managers, HSE Professionals and other professionals involved in food safety/management.

DURATION/Dates
5 days May 20-24 October 14-18

Course Title and Introduction

ENVIRONMENTAL IMPACT ASSESSMENT:
This course provides excellent training for officials within the government sector in the evaluation, management and administration of environmental impact assessments, environmental consultants and research scientist. The review of EIA related reports and applications (including applying the law, site investigations, etc.); setting of enforceable conditions and the monitoring thereof; and socio-economic considerations in EIA and public participation are included in the training.

Course Content
- Introduction and Background to EIA
- Law Policy and Institutional Arrangements
- Identification of Issues, Public Participation & Stakeholder Involvement
- Environmental Audits (EA) and Environmental Management Systems (EMS)
- Scoping & Terms of Reference for Specialist Studies
- Identification and Review of Alternatives
- Environmental Impacts Evaluation
- Impact Mitigation and Abatement
- Development of Environmental Management Programmes
- Decision making and writing Conditions of Approval
- Appeals, implementation and compliance monitoring
- Case studies of EIA reports and their shortfalls

Learning Outcomes
- Assess the adequacy and quality of all documents culminating in review of the EIA report
- To take account of public comment and to take advantage of public EIA review
- Determine if the information and process culminating in EIA sufficient for a final decision to be made
- Identify, as necessary, the deficiencies that must be addressed before the report can be submitted

Target Audience
Persons involved in enforcing the EIA regulations in Nigeria, environmental consultants, policy makers on environmental management, research scientist on environmental studies. Persons who would like to understand the way in which EIA documentation is evaluated and managed.
The course is designed to suit the following categories of people but not limited to them:
- Asset Integrity Managers, Maintenance Managers, Production Managers, HSE Managers.
- Safety Engineers, Reliability Engineer/Maintenance Engineer/ Supervisor Safety professional
- Design Engineer/Production Engineer and everybody who wants to broaden knowledge and interest in these areas.

DURATION/Dates
5 days April 22-26 October 7-11

Course Title and Introduction

RISK ANALYSIS USING BOWTIE METHODOLOGY:

Introduction to Bow-Tie methodology training to personnel working in the oil and gas and other related industries provide a flexible approach for applying the tool for Risk Assessment. Bow-Tie technique is used for analysing hazard scenarios, identify existing barriers, and identify escalating hazards and managing the risk effectively. With visual diagram, Bow-Tie technique is an excellent tool for communication through different levels of workforce in organization. The participants will learn the Bow-Tie methodology from principle to advance; as well as gain hands-on experience through Bow-Tie workshop.

Course Content
- Bow-Tie History and Methodological parents
- Overview of Bow-Tie and advantages of Bow-Tie
- Introduce Bow-Tie Software
- Risk Assessments and ALARP Exercises
- Data manipulation, Export & Import

Learning Outcomes
- Understand Risk Management

- Differentiate between Quantitative vs. Qualitative
- Understand the Bow-Tie Methodology
- Exercises
- Understand Escalation Factor and the management System

Target Audience
Engineers, Process Safety Management coordinators/managers, plant management executives, HSE Operations & Management personnel including others responsible for Risk Management.

DURATION/Dates
2 days April 1-2 July 22-23
September 2-3

Course Title and Introduction

LAYERS OF PROTECTION ANALYSIS (LOPA):

This course Covers the basic methodology of LOPA and the detailed stages of its application. Participants are shown how to identify significant scenarios, estimate frequencies for the worst-case events and how to assign risk categories.

Course Content
- Introduction to LOPA
- Developing LOPA Scenarios
- Estimating the consequence of the scenario
- Estimating the Likelihood of the Selected Initiating Event
- Estimating the Probability of Failure of Independent Protection Analysis
- Calculating Risk
- Judging the Risk
- Case studies
- Special Applications of LOPA
- Planning your path forward with LOPA

Learning Outcomes
Details in old brochure

Target Audience
Engineers, Process Safety Management coordinators/managers, plant management executives, HSE Operations & Management personnel including others responsible for Risk Management.

DURATION/Dates
2 days March 25-26 June 10-11
November 11-12

Course Title and Introduction

OIL SPILL RESPONSE AND MANAGEMENT:

This course is designed to give you an insight into some of the key complexities that you may face in an event of oil spill incident and the tools to use to overcome such. The course gives the candidate a chance to use their own initiative and thought processes to understand the challenges of incident management. Candidates are also able to witness the difficulties faced in deploying equipment with a hands-on practical exercise. The course will give you a structured journey of an oil spill from the causes and fates of oil spills through to oil spill response termination. At the end of the training, PTI certificate of completion will be awarded to the candidates who score more than 70% of the assessment.

Course Content
- Introduction to oil spill, response and management
- Consequence of oil spill
- Spill response option and resource requirements
- Roles of government agencies and the industry
- Safety first culture in spill response
- National and International conventions and legal frameworks
- Protecting your organisation reputation

Learning Outcomes
- Develop Effective emergency response contingency plans
- Understand consequence of oil spill
- Understand Spill response options and resources requirements
- Understand roles of government agencies and the industry
- Understanding PR and media expectations and how to effectively communicate with the media and general public
- Understanding how to terminate a response

Target Audience
Personnel responsible for emergency response management and command of oil spill response incidents, Decision-making managers within the oil and gas and shipping

industries, Individual performing the role of an Executive Commander, Incident Controller or Incident Commander in an Emergency Response Team, People belonging to regulatory or statutory bodies associated with emergency response, Senior officials from government agencies involved with spill response (Environment, Navy, Army, NIMASA, NPA, etc.), Harbour masters, Port Captains, Incident managers at port and terminals

DURATION/Dates

3 days	May 6-8	August 26-28
	Oct 28-30	

Course Title and Introduction

FAILURE MODE AND EFFECTS ANALYSIS (FMEA) AND RISK BASED MANAGEMENT (RBM)IN OIL AND GAS OPERATIONS:

This course is designed to provide participants with practical tools in analysing oil and gas operation risks and make recommendations for minimization and control using FMEA best principles and best practices

Course Content

- FMEA Basic Concepts
- FMEA Analysis
- RBM Analysis

Learning Outcomes

- To concepts understand the failures, risk and criticality concepts
- To understand the different application of FMEA and FMECA concepts
- To understand the Design Failure Mode and effect analysis (DFMEA).
- To understand the Process Failure Mode and effect analysis (PFMEA).
- To understand the System Failure Mode and effect analysis (FMEA).
- To understand the Maintenance concepts.
- To understand the Reliability Centered Maintenance
- To understand the FMEA & RCM concept as basic of safe integrity asset performance achievement.

Target Audience

Asset Integrity Managers, Maintenance Managers, Production Managers, HSE Managers.

Safety Engineers, Reliability Engineer/Maintenance Engineer/ Supervisor Safety professional

Design Engineer/Production Engineer and everybody who wants to broaden knowledge and interest in these areas.

DURATION/Dates

3 days	May 6-8	August 5-7

Course Title and Introduction

HAZOP STUDY AWARENESS:

At the end of the course, you will understand the HAZOP process, its benefits and limitations, the roles and responsibilities of HAZOP participants and when the HAZOP technique should be applied

Course Content

- Introduction to HAZOP
- HAZOP Team Composition and Process

Learning Outcomes

- Understand HAZOP
- Understand the HAZOP process – nodes, deviations and causes
- Understand who should participate in a HAZOP – roles and responsibilities
- The HAZOP process – consequences, safeguards and recommendations
- Understand what HAZOPs don't do for you

Target Audience

Engineers, HSE personnel, Process engineers, Reliability engineers and those interested in becoming scribes and undertaking HAZOP jobs.

DURATION/Dates

1 day	April 2	August 5
	October 2	

Course Title and Introduction

HAZOP TRAINING FOR TEAM LEADERS AND MEMBERS:

This integrated course provides effective, realistic training for HAZOP team members and leaders using examples drawn from a range of specialised industry sectors as well as

presentations covering all the essential aspects of the method, you will participate in workshops on HAZOP for continuing processes, sequential operations and computer-controlled plant. You will also learn more about the relationship between HAZOP and other hazard identification methods and hazard studies.

Course Content
- HAZOP Overview
- Risk Assessment Introduction
- HAZOP Competencies
- HAZOP Methodology
- HAZOP Preparation
- HAZOP Software
- HAZOP Facilitation
- Introduction to LOPA
- Recommendation and Report Writing
- Revalidation HAZOPs

Over 50% of the course time is allocated to group work on realistic HAZOP case studies, giving practice in their respective roles for both team leaders and team members. Examples are drawn from a range of process industries and typical reports are also provided. Participants take part in discussion and analysis sessions to identify strengths, weaknesses and learning points from the case studies.

Learning Outcomes
- Understand the purpose and benefit of using HAZOP and how it fits into safety and risk management framework
- Have an appreciation of the requisite skills required for HAZOP participation, recording and facilitation
- Understand and apply the HAZOP methodology
- Creatively investigate a process design to identify the potential process deviations, their possible causes and their consequences
- Understand layers of protection analysis (LOPA)
- Write a HAZOP report

Target Audience
Asset Managers, Maintenance Managers, Production Managers; Logistic Managers, Reliability Engineer/Maintenance Engineer/ Logistic and Supervisor; Rotating Engineer/ Static Engineer/Supervisor; Design Engineer/Production Engineer and everybody who wants to broaden knowledge and interest in this topic.

DURATION/Dates

3 days	April 1-3	August 5-7	October 7-9

Course Title and Introduction

THE COMPLETE COURSE FOR RISK, RELIABILITY AND SAFETY MANAGEMENT:

This training course examines learning from failures and techniques for decision analysis with emphasis on the use of advanced risk, reliability and operational research techniques and applying them to cases of major failures and disasters.
The idea of the training course is to look at Learning from Failures. This will be through examining known and topical cases, as well as cases related to the particular own experience of the delegates. This will be based on the analysis of reported disasters with the aim of exploring techniques that can help us to understand the root causes of why those incidents occurred and how such crises unfold over time and hence how can we learn generic lessons from those disasters.

Course Content
- Understanding of safety, risk and continuity of operations
- Development of people management skills
- Mastering techniques that can enhance plant reliability
- How to conduct benchmarking and quality systems auditing
- Applying decision analysis approaches

Learning Outcomes
- Learn Best Practice and learn how to avoid Bad Practice through assessment of case studies of disasters in various industries
- Gain sufficient skills to work in industry as reliability, maintenance, safety and quality professionals
- Explain the benefits of acquiring best practices from High Reliability Organizations (HROs)
- Determine methods for generating and implementing effective performance metrics
- Analyze critically the methodologies employed in the organization & implement improvements

Target Audience
Operations & Process Professionals
Reliability & Safety Professionals

Other professionals involved in process improvement

DURATION/Dates
10 days May 13-24 October 7-18

Course Title and Introduction

NATURALLY OCCURRING RADIOACTIVE MATERIALS (NORM/TENOM) SOURCES HANDLING AND MANAGEMENT IN OIL AND GAS INDUSTRY:

To train the participants on the hazards of uncontrolled activities associated with enhanced levels of NORM can contaminate equipment, the environment and pose risk to human health.

The training will be an interactive and practical experience with case studies. Including practical NORM measurement.

Course Content
- Origin and sources of NORM
- Dosimetry and units
- Measurement and detection of norm/practical guide/NORM
- Exposure and Health Hazards of NORM
- Contamination and Waste in the oil and gas industry.
- Transportation of NORM Waste and disposal options.
- NORM Management Process Cycle.
- NORM Decontamination.
- NORM Regulations, Control, and guidelines of NNRA, IAEA.

Learning Outcomes
- Understand NORM exposures and hazards
- Be able to use measuring and detection equipment
- Understand safe NORM management and transportation
- Understand NORM regulations

Target Audience
HSE Supervisors, HSE managers, Radiation Protection officers and others.

DURATION/Dates
3 days July 22-24 September 2-4

Course Title and Introduction

FIRE PREVENTION AND CONTROL TECHNIQUES:

This course is designed to provide participants with skill and knowledge in preventing and controlling fire risks in their workplace.

Course Content
- Fundamentals of fire prevention requirement
- Fire Chemistry
- Characteristics of fuels in the Petroleum Industry
- Mechanism of Combustion
- Fire Prevention Techniques
- Classification of fire
- Fire suppression and techniques of extinguishment
- Effects of fire on personnel
- Firefighting equipment; installations and techniques
- Emergency/evacuation procedures
- Evaluation of fire risk.

Learning Outcomes
- Identify fire hazards in their operations and prescribe
- preventive measures.
- Classify their work environment into fire zones
- Attack and extinguish any fire outbreak using portable fire extinguishers

Target Audience
Safety Personnel, Fire Officers; Loss Control, Managers and Supervisors, Security Officers/Supervisors in various sections of the Petroleum Industry.

DURATION/Dates
5 days May 6-10 October 14-18

Course Title and Introduction

RENEWABLE ENERGY AND ENERGY EFFICIENCY:

Renewable energy and energy efficiency are essential for managing water resources and food production in a more socially and environmentally-responsible way. This course is designed to provide delegates knowledge and skills to make food, water and energy systems more sustainable

Course Content
- Photovoltaic solar power generation

- Basic of solar energy
- Photovoltaic System
- Photovoltaic energy conversion performance and output
- Electrics for photovoltaic
- Hands on installation
- Electrical Safety
- Legislations in renewable energy
- Wind power generation
- Wind energy conversion
- Wind turbines structures
- Electrics for wind systems
- Site selection and planning
- Resource estimation
- Installations and Safety

Learning Outcomes
- Understand Photovoltaic and wind energy systems
- Be able to safely install renewable energy systems
- Understand renewable energy regulations

Target Audience
Technicians, Supervisors and others that want to develop carrier in renewable energy

DURATION/Dates
3 days May 6-8 November 4-6

Course Title and Introduction

CHEMICAL WASTE HANDLING AND MANAGEMENT:

To acquaint participants with new and modern techniques in the handling and management of Chemical Waste in the Petroleum and Allied Industries.

Course Content
- Theory of Chemical Waste
- Identification and Classification of Chemical Waste
- Analysis of Chemical Waste
- Temporary Storage of Chemical Waste
- Transportation of Chemical Waste
- Safety Aspects in Handling of Chemical Waste
- Treatment of Chemical Waste
- Disposal of Chemical Waste
- Learning Outcomes
- Understand hazards of chemical waste
- Understand how to handle chemical waste without damaging the environment
- Understand hazard waste classification and best disposal techniques

Target Audience
Laboratory Technicians and Technologists, Oil Field Workers, Chemical Analyst, Supervisors, Field Officer, Safety and Health Officers and Managers

DURATION/Dates
3 days February 4-6 August 26-28

Course Title and Introduction

BASIC FIRST AID:

This basic first aid course is the standard training recommended for workplace first aid providers. It's also good for anybody who wants to be able to help during a medical emergency. Medical emergencies related to ill health or an accident can happen anywhere at any time this course will ensure you know what to do.

Course Content
- Consideration and classification of accident
- The purpose of first aid treatment
- General Consideration of different types of injuries
- and method of handling them.
- Consideration of the contents of First Aid kits
- Basic CPR

Learning Outcomes
- Be able to recognize life-threatening situations.
- Be able to offer vital assistance before more experienced help arrives.

Target Audience
Emergency responders, Hall Wardens, Engineers, Technicians, Management, and all employees working in an industrial environment.

DURATION/Dates
3 days April 23-25 November 26-28

Course Title and Introduction

POLLUTION PREVENTION AND CONTROL:

To acquaint participants with the knowledge of environmental
protection. Pollution Control and prevention, environmental impact of pollution.

Course Content
- Introductory Ecology
- Pollutants Classification of air, water and land
- pollutants and toxic Metals. Effects and prevention.
- Water Pollutants, Sewage Treatment and biological
- examination of water.
- Oil Spillage and procedures to combat the oil spillage.
- Other Pollutants from the Petroleum Industry and remedial
- measures.
- Toxicology.

Learning Outcomes
- Understand what a pollutant is
- Understand the effective preparation, planning, and implementation of pollution prevention and control measures

Target Audience
Chemical, Production, Petroleum, Mechanical Engineers, Field Production Supervisors, Technicians, Science Laboratory Technologists, Para-Medical Staff, staff of environment protection agencies, water works, etc.

DURATION/Dates

3 days	March 11-13	June 24-26
	October 28-30	

Course Title and Introduction

OIL/DRILLING WASTE MANAGEMENT:

To equip participants with modern
techniques for the safe handling and disposal of oil and drilling waste in an environmentally friendly manner.

Course Content
- Basic Chemistry of Crude Oil
- Drilling Fluids
- Composition/formation of drilling waste
- Toxicity of oil drilling waste
- Waste Management Techniques
- Waste disposal methods

Learning Outcomes
- Understand best waste disposal technique for oil/drilling waste
- Understand waste management hierarchy
- Understand regulatory requirements for oil/drilling waste

Target Audience
Waste Management Personnel, HSE Personnel, CLO's and Drilling Rig Personnel.

DURATION/Dates

3 days	April 15-17	August 5-7
	November 18-20	

Course Title and Introduction

SAFETY/HSE SKILLS TRAINING:

For managers, safety representatives or other employees to perform their functions, they need to be equipped with appropriate skills and knowledge across core HSE requirements especially in an industrial environment. This course is built around current real-world expertise and will enable participants align with current practices in the industry.

Course Content
- Introduction to Safety
- Unsafe acts/unsafe condition
- Classification of accident
- Cost/causes of accident
- Supervisor/accident prevention
- Safety inspection
- Unsafe Acts Audit (UAA)
- Accident Investigation and Reporting
- HSE Management System (HSE-MS)
- Benefits of HSE-MS
- Job Hazard Analysis
- Risk management
- Risk Control Strategies
- Occupational Health Hazards and Control
- Environmental Impact Assessment (EIA)

- Waste Hierarchy
- Waste Management Techniques
- Control of Toxic Wastes

Learning Outcomes
- Understand HSE management
- Be able to identify hazards
- Understand accident classification and prevention
- Be able to analyze risk using a simple risk matrix
- Be able to recommend and controls for eliminating/mitigating risks using the hierarchy of controls
- Understand Occupational Health hazards and control measures
- Be able to prepare a JHA
- Understand EIA requirements
- Understand waste management hierarchy

Target Audience
Safety Professionals, Environmentalists, Lab Personnel, Field Personnel, Loss Control Supervisors/Managers

DURATION/Dates
5 days June 17-21 October 7-11

Course Title and Introduction

WASTE MANAGEMENT:

The main aim of this course is to expose the participants to new technology in waste handling and disposal. These methods of waste management would ensure a clean environment.

Course Content
- Classification of Waste
- General Consideration of the various hazards associated with
- wastes accumulation.
- Waste disposal methods
- Consideration of waste treatment methods
- Personnel protective equipment for waste Disposal
- Consequences of untreated wastes
- Field Trips.

Learning Outcomes
- Understand waste disposal methods
- Understand hierarchy of waste management
- Understand waste management techniques

Target Audience
Environmental Scientists, Staff of environment protection agencies, Local Government Council Sanitary Officers, Health Staff, Safety Officers, Engineers.

DURATION/Dates
5 days February 4-8 August 5-9

Course Title and Introduction

TOXICITY OF ENVIRONMENTAL POLLUTANTS:

To acquaint participants with the basic knowledge of the extent/degree of toxicity of some pollutants, their dangerous effects in the environment and preventive measures.

Course Content
- Sources and types of pollutants - Biodegradable and nonbiodegradable.
- Distribution, availability and measurement of pollutants in the environment.

Learning Outcomes
- Understand the effect of pollutants on the environment
- Understand pollution sources and how to manage them

Target Audience
Health Staff, FEPA Staff, Food and drug Administration Staff, Environmental and Safety Officers, Staff of Water Works, Laboratory Technologists and Technicians, Chemists and Chemical Engineers.

DURATION/Dates
5 days March 4-8 September 2-6

Course Title and Introduction

DEFENSIVE DRIVING SKILLS FOR DRIVERS LEADING TO DRIVERS CERTIFICATION:

This course is designed to equip the participants with the concept of road accident, the unsafe and unsafe conditions and how they contribute to road accident, and the procedure to be taken to reduce road accidents. It is also to enhance

the driving skills of the drivers.

Course Content
- History of Road Safety in Nigeria
- Road accident statistics in Nigeria
- Unsafe acts by drivers
- Unsafe Conditions
- Conditions that lead to road accidents
- Defensive driving
- Drive and survive rules
- Elements of defensive driving
- Characteristics of defensive drivers
- Standard accident prevention formula
- Positions of two vehicles collisions
- Second rules
- Stopping distance formula
- Following distance
- Reaction distance
- Road traffic Accident reduction
- Goals of road traffic accident reduction
- Avoidance of Head on collision
- Perfect Trip
- Types of inspection
- Procedures of road accident reporting
- Study of some recorded road accidents - possible causes and
- prevention
- Practical Section - Driving Simulator

Learning Outcomes
- Understand road traffic requirements
- Be able to drive safely and defensively
- Be able to identify unsafe driving conditions and apply precautions
- Understand vehicle inspection requirements

Target Audience
Professional Drivers and all who desire to gain defensive driving skills

DURATION/Dates
5 days February 4-8 September 9-13

Course Title and Introduction

INTRODUCTION TO REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS (GIS) FOR ENVIRONMENTAL MANAGEMENT:

GIS is a powerful tool for environmental data analysis. It allows better viewing and understanding physical features and the relationships that influence in a given critical environmental condition. On completion of this course, participants will receive knowledge and skill in analyzing GIS data in planning and managing the environmental hazards and risks.

Course Content
- Remote Sensing an overview
- Electromagnetic spectrum
- Sensing Systems
- Practical Remote Sensors
- Data reception transmission and processing
- Global Positioning Systems (GPS) and Practical Application
- (Outside Class discussion)
- Overview of Geo-Spatial Data.
- Geospatial Representation, Processing and Analysis.
- Introduction to GIS Software
  i. Licensed Software
  ii. Open Source Software

Learning Outcomes
- Create the awareness of the importance of remote sensing and
- GIS in Environmental and Disaster Management.
- Develop capacity of participants in Remote Sensing and GIS applications.
- To develop the participants in digital map generation and practical applications.

Target Audience
Environmental Scientist / Engineers, Surveyors, Urban Planners, Decision Makers, e.t.c.

DURATION/Dates
5 days August 12-16

Course Title and Introduction

RADIATION PROTECTION TRAINING:

It is designed to provide delegates with the radiation protection knowledge they required to supervise others working with ionizing radiation. Delegates will also gain understanding of hazards and risks associated with ionizing radiation. This will enable them to undertake risk assessments develop safe systems of work and to implement contingency programmers identified from such risk assessment training.

Course Content
- Ionizing radiation.
- Units used in radiation protection.
- Biological effects of ionizing radiation.
- Radiation dosimeters.
- Ionizing radiation risk assessments.
- Radiation monitors.
- Ionizing radiation regulations.
- Radiation Safety.
- NORM/LSA and the Management of NORM waste in oil and gas industry.
- Industrial Radiography

Learning Outcomes
- Understand ionizing radiation properties and effects
- Understand radiation monitoring regulations and requirements
- Understand HSE requirements
- Be able to conduct risk assessments
- Be able to develop radiation protection systems

Target Audience
Radiation Protection Supervisors, Radiation Safety Officers (RSO), Industrial Radiographers, Managing Radioactive Site Contractors, X-ray Welders. e.t.c.

DURATION/Dates
5 days April 15-19 September 16-20

Course Title and Introduction

RADIOLOGICAL SAFETY PROTECTION COURSE:

This course is intended for ionizing radiation source user for inspections, welders, industrial radiography, maritime, nuclear well logging and radioactive material transporting companies.

Course Content
- Radiation fundamentals
- Interaction of Radiation with matter
- Biological Effects of Ionizing Radiation
- Principles of Radiation Protection
- Safe Transfer and Transportation of Radioactive materials
- Radiation Monitoring and Detection
- Practical use of Radiation monitoring instruments for personnel Safety
- Local Rules and Risk Assessment
- Emergency and Contingency Planning
- Case studies of some radiation incidents/accidents
- Utilizing Contingency Planning and Preparation

Learning Outcomes
- Understand radiation sources
- Understand safe means of handling radiation sources
- Understand regulations for transporting, storing and using radiation sources
- Understand radiation protection standards an philosophies

Target Audience
Radiation Protection Supervisors, Radiation Safety Officers (RSO), Industrial Radiographers, Managing Radioactive Site Contractors, X-ray Welders. e.t.c

DURATION/Dates
5 days June 17 - 21 October 7 - 11

Course Title and Introduction

FUNDAMENTALS OF INDUSTRIAL PROCESS MEASUREMENT:

This course is designed to provide participants the skill and knowledge in various devices used for measuring process variables.

Course Content
- Pressure measurement
- Temperature Measurement
- Level Measurement
- Flow Measurement

Learning Outcomes

- Identify various devices used for measuring process variable.
- Understand the constructional features and operational principle of the fundamental process variable devices.

Target Audience

Instrument engineers, technologists and technicians. For electrical engineers, technologist, technicians, and instrument operators who are working in oil establishment

DURATION/Dates

3 days March 4-6 September 3-5

Course Title and Introduction

INSTRUMENT DIAGRAMS AND SYMBOLS:

This course is aimed at opening the trainee's minds towards appropriate symbols used to represent different instrument and control techniques obtainable in the oil and gas Industry.

Course Content

- Instrumentation and designations
- Mechanical equipment with names and numbers
- All valves and their identifications
- Process piping, sizes and identification
- Miscellaneous - vents, drains, special fittings, sampling lines, reducers, increasers.
- Permanent start-up and flush lines
- Flow directions
- Interconnections references

Learning Outcomes

- Identify various symbols used to represent various instruments
- Understand and interpret instrument diagrams

Target Audience

Instrument engineers, technologists and technicians. For electrical engineers, technologist, technicians, and instrument operators who are working in oil establishment

DURATION/Dates

3 days April 15-17 Aug 5-7

NEBOSH IGC

Course Title and Introduction

NEBOSH IGC- INTERNATIONAL GENERAL CERTIFICATE IN OCCUPATIONAL HEALTH AND SAFETY

Participants will develop the required knowledge needed to recognize and operate International Health and Safety Practice in various organizations. It will improve their skills on how to carry out Health and Safety responsibilities in their various organizations.

This course will assure required standards, a safer workplace, enhancement, advancement in course development, and knowledge to manage Health and Safety at the workplace.

It is guided by best practices standards with practice codes separated into two units: The management of Health and IGI Safety.
IG2: Practice Risk Assignment

Course Content

- Management of workplace Health and Safety
- Health and Safety Management systems
- Benefit of Safety Management systems
- Managing Risk, People, and Processes
- Health and Safety culture
- Behavioral and Human factor
- Risk Assessment
- Management of change
- Safe systems of work
- Permit to work system
- Emergency Procedures and Practices
- Health and Safety Monitoring and Measuring
- Physical and Psychological Health
- Musculoskeletal Health
- Chemical and Biological Agents
- General workplace issues
- Work equipment
- Fire
- Electricity – Hazards and Risk control measures

Learning Outcomes

- Participants will be able to recognize potential Hazard, evaluate the risk, and recommend control measures to eliminate or minimize risk
- Recognize changes at the workplace that has a significant impact on Health and Safety
- Carryout Risk assessment on their own in their workplace
- To inspect, profile and prioritize risk and plan actions to mitigate accident
- Recognize Effective Management system
- Work within a Health and Safety Management System
- Develop a safe system of work in any organization

Target Audience

- Graduates from various fields of study
- Engineers
- Supervisors
- Human Resource Managers
- Directors
- Operational Managers
- Safety Professionals
- General Managers
- Public service workers

DURATION/Dates

10 days June 14-25 October 11-22

Course Title and Introduction

NEBOSH HEALTH AND SAFETY AT WORK

This course provides a basic understanding of Health and Safety, bringing into consideration different workplace scenarios and their challenges. It will help participants practice risk assessment hazards identification and control, above all, have a basic understanding of health and safety practices.

Course Content
- General Health and Safety awareness
- General workplace Risk Assessment
- Health and Safety cases
- Incident prevention
- Workplace Hazards
- Inspection and monitoring
- Managing Health and Safety
- Risk Assessment

Learning Outcomes
- Participants will be able to identify effective Health and Safety management system
- Be able to identify the hazard and Assess Risk in a workplace
- Identify workplace hazard, mitigation, and control
- Investigate an incident and write a comprehensive report
- Understand how to investigate an incident and ascertain why it happened
- Define an effective Health and Safety Management system in a workplace
- Identify various methods for improving the Safety Management System
- Understand their responsibility as a Safety practitioner

Target Audience
- Any individual who wants to improve his/her knowledge and skills in Health and Safety
- Workers from all industries regardless of their background
- Facility Managers
- Technologists
- Supervisors

DURATION/Date

3days May 3-5 Nov 2-4

Course Title and Introduction

NEBOSH INTERNATIONAL DIPLOMA IN OCCUPATIONAL HEALTH AND SAFETY

This course is a qualification for aspiring Health and Safety professionals building upon initial knowledge of Health and Safety either provided by NEBOSH IGC or other relevant qualifications. It provides the participant with the required expertise to build a career as a Health and Safety practitioner promoting a sound basis for career progression.

Course Content

This content is divided into subunits with various elements containing in each unit:
- In-depth understanding of Health and Safety Management
- Managing Health and Safety at work
- Hazardous substances/agents
- Workplace and work equipment safety
- Application of Health and Safety in a workplace

Target Audience
- Managers
- Industry professionals
- Engineers
- Safety professionals
- HSE officers
- Instructors/ Facilitators/ Trainers
- Consultants
- Personnel in the Oil and Gas industry
- Industrial technologists

Learning Outcomes
- Participants will be provided with extensive knowledge to practice Health and Safety adopting regulating changes in an organization
- Implement Health and Safety Management strategy at an operational level
- Place control measures on Health and Safety issues in the workplace
- Improve participants' knowledge on accident prevention and control in an organization
- Understand the measures to improve productivity by reducing costs from health, financial and operational challenges
- Understand the key areas for managing Health and Safety in an organization
- Improve your knowledge in Health and Safety review to provide a justified recommendation

DURATION/Date

6 Months

OPITO BOSIET

Course Title and Introduction

BASIC OFFSHORE SAFETY INDUCTION AND EMERGENCY TRAINING (OPITO BOSIET)

To provide participants with a basic level of understanding and awareness of safety and emergency response on offshore installations based on the OPITO standards for BOSIET participants will be required to demonstrate relevant skills and knowledge.

Course Content

- Safety induction
- Helicopter Safety and Escape
- Sea Survival
- Fire fighting and self-rescue
- Basic First Aid

Target Audience

People traveling offshore and desirous of working on such installations

DURATION/Dates

3days	April 19-21	November 22-24

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