



## Petroleum Training Institute CONSULTANCY SERVICES



# 2017 BOOSTER COURSES

PTI: Repositioned  
to meet 21st  
Century Oil/Gas  
Industry Needs

Learning @ Shell Block, PTI Conference Centre Complex,  
Effurun, Delta State .

**For further enquiries contact:**

THE CHIEF CO-ORDINATOR, PTI CONSULTANCY SERVICES,  
P. M. B. 20, EFFURUN, DELTA STATE.  
Tel: +234 802 332 5487, 0805 205 2867  
E-mail: [consult@pti.edu.ng](mailto:consult@pti.edu.ng)

### **Programmes**

#### **Short/Booster Courses**

- Petroleum
- Mechanical
- Electrical/Electronics
- Natural Gas Technology
- Welding/Offshore Technology
- Computer Engineering
- Petroleum Marketing/Business Studies
- Industrial Safety/Environmental Technology
- Management Technology

#### **Skills Acquisition in:**

- Plumbing & Pipefitting
- Block Laying & Concreting
- Carpentry & Joinery
- Electrical Installation & Maintenance
- Welding & Fabrication
- Mechanical Craft
- Diving & Underwater Welding
- Information & Communication Technology
- Hotel & Catering Management
- Safety & Environmental Technology

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EE 20	Pressure Measurement and Temperature Measurement
EE 21	Process Measurement and Control
EE 22	Basic PLC Programming (Siemens Allen Bradley and Mitsubishi)
EE 23	Instrument Maintenance and Repair
EE 24	Advance PLC Programming (Siemens Allen Bradley and Mitsubishi)



## F O R E W A R D

The Petroleum Training Institute in fulfilment of its mandate as spelt out by the Federal Government in the act establishing PTI, to train and develop human capacity for the oil and gas industry have designed courses of instruction, specifically and directly to improve the efficiency of the employees/operators of the oil and gas industry.

The courses are designed to meet the emerging challenges in the ever dynamic oil and gas industry. This year (2017) a total of 169 courses covering the entire operational areas of the industry are available and are hereby presented in this brochure for the industry and corporate organization to benefit from.

The Short/Booster course programme is committed to the success of the participants. The lecturers and instructors bring their wealth of industry experience to bear on the various courses offered by the Petroleum Training Institute.

In order to ultimately benefit from the training, all training programme are conducted in a conducive environment using the state of the art facilities in the ultra-modern Conference Centre Complex which is similar to what is obtainable in the oil and gas industry around the globe.

Some of our facilities and summary of our major programme are as follows:

- Conference hall with sitting capacity of 600 guest with central air-condition, spacious stage (with support IT facility) multimedia, projector, video properties, syndicates workshop and committee rooms, etc.
- Exhibition Gallery, Guest Rooms/Suits, Standby 500 KVA Generator, Super market, Bar, Restaurant, etc

Other services offered by the PTI Consultancy Services Limited include:

- Printing press: Modern colour separator Printing Press, Type-setting, designs/printing etc
- Petroleum Analysis Laboratory: It has ultra modern equipment, which undertakes laboratory analysis on crude oil, petroleum fraction, environmental impact assessment (EIA), waste waters and natural gas analysis and evaluation.
- Computer Technology Centre: The Centre is repackaged to engage in engineering services, management training, consultancy services, installation, maintenance of hardware, development of software and host of others.
- Skill Acquisition Programme: The programme is designed to train Nigerian youths on specific crafts in order for them to be self employed or employers of labour in the following areas:
  - i. Electrical installation and maintenance
  - ii. Welding and fabrication
  - iii. Mechanical craft (Diesel/Petrol engines, crane and Fork Lift)
  - iv. Information and Communication Technology (ICT)
  - v. Diving
  - vi. Safety and Environmental Technology
  - vii. Pipe fittings and Plumbing
  - viii. Concrete work and Block laying
  - ix. Joinery and Carpentry

The Skills Acquisition Programme will enable the trainees to achieve a required standard in theory of the trade as well as their practical skills to a level that will indicate to future employers their potentials to attain the status of technicians/artisans.

We are thrilled to partner with all stakeholders in the Oil and Gas industry public/private organizations and policy makers to build a viable workforce for the industry. To all stakeholder, now is the time to act, partner with us and take advantage of these unique services offered by the Institute, so we can collectively build up the Nigeria Content, develop and organize human Capital Capacity.

Prof. Sunny E. Iyuke, PhD, CEng, PrEng, FSAAE  
Principal/Chief Executive,  
Petroleum Training Institute, Effurun, Delta State.

## Short/Booster Course Unit

**T**he Short Booster Course is a unit of the PTI Consultancy Services Limited. It is situated at the PTI Conference Complex (Shell block). It specialized in updating the knowledge of personnel's already in the Oil/Gas and Allied industries.

The recent upgrade of the PTI Facilities and Personnel have increased the qualities of staff and materials in the services rendered to the Oil/Gas and Allied Industries. The Booster courses can now compete favourably with similar organization in the world. The unit has therefore reposition its self to serve the Oil/Gas and Allied industry better.

In the areas of skill acquisition scheme, the unit had excelled in the past in the training of companies host communities youths in various skills. Companies which had benefited in the past were Exxon Mobil, Chevron, NAOC, Total/Elf, Shell, etc.

Also customized courses could be mounted on request and in such cases courses are packaged and tailored to suit client demands.

The unit advertised over one hundred and sixty-nine (169) courses in 2014 Calendar year, we therefore appeal for patronage from all multinational, National Oil/Gas and Allied Industries in obedience to the Federal Government call on local content and capacity building utilization.

# Petroleum Engineering & Geosciences Department

The petroleum Engineering and Geosciences Department is the arrow head of the Institute. It provides courses of instruction, training and research in petroleum technology to produce technicians and such other skilled personnel normally required for crude oil production at the National Diploma and Higher National Diploma levels.

To further enhance the quality of training, the department apart from using audio-visual aids, also utilizes the following facilities for extensive practical demonstration:

- Mini flow station
- Training Rig
- Functional Petroleum Analysis/Drilling fluid laboratory.
- Production/Drilling workshops
- Mineral Processing/Beneficiating Plant/Workshop

Some of the beneficiaries of the Services rendered by the highly qualified and tested lecturers of Petroleum Engineering and Geosciences Department are as follows: The NNPC, NPDC, NAPPIMS, NAOC (AGIP), DPR, CHEVRON, TOTAL, EXXONMOBIL, PAN-OCEAN OIL, CISCON, SPDC, PLATFORM, etc.

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COURSE NO. PE 1  
PETROLEUM SURFACE PRODUCTION AND EQUIPMENT

Duration: 6th - 10th March, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run  
30th Oct - 3rd November, 2017 - 3rd Run

#### Course Objective:

To equip participants with the knowledge of production operation, take decisions on field operational problems with a high degree of success with little or no reference to the immediate supervisor. Select right materials for an effective operation of a production field.

#### Course Outline:

- Basic Reservoir Engineering
- Crude oil gathering systems
- Crude oil treatment separation systems
- Crude dehydration system
- Salted and foamy crude problem and treatment processes.
- Corrosion Control.

For Whom: Production and Petroleum Engineers, Field Production Supervisors and Technicians, Personnel in the Oil Industry and Petroleum Inspectors.

Course Fee: N100,000.00 per participant.

COURSE NO. PE 2  
PETROLEUM EXPLORATION AND EXPLOITATION  
FOR NON-PROFESSIONALS

Duration: 20th Feb. - 3rd March, 2017 - 1st Run  
21st Aug. - 1st September, 2017 - 2nd Run

Course Objective:

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.

Course Outline:

Petroleum exploration, Basic geological concept, Petroleum formation and accumulation, finding Petroleum traps (Geological and geophysical methods).

Drilling Technology, Rigs and Equipment, Drilling Processes, well completion and well control. Production Technology, Surface and Subsurface, Production Equipment, Field gathering, treatment and storage of oil and gas, measurement of oil and gas and reserves estimates, well production performance monitoring well testing, artificial lift methods and secondary recovery methods.

Refining crude oil, refining processes for gas, kerosine, petrol, diesel, etc. products oil terminals and petrol stations-pipe lines and trucks transportation of petroleum products.

For Whom:

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.

Course Fee: N180,000.00 per participant.

COURSE NO. PE 3  
WIRELINE (SLICKLINE) OPERATIONS & MAINTENANCE

Duration: 13th - 17th February, 2017 - 1st Run  
8th - 12th May, 2017 - 2nd Run  
16th - 20th October, 2017 - 3rd Run

Course Objective:

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

Course Outline:

- 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.

For Whom:

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

Course Fee: N180,000.00 per participant.

COURSE NO. PE 4  
COILED TUBING OPERATIONS

Duration: 27th - 31st March, 2017 - 1st Run  
14th - 18th August, 2017 - 2nd Run

Course Objective:

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.

Course Outline:

- Introduction
- Coil Tubing Surface equipment
- Computation for field operation



- Downhole tools
- Coiled tubing services
- Drilling
- Testing
- Completion
- Production
- Workover

For Whom: All Production and Petroleum Personnel  
 Course Fee: N150,000.00 per participant.

COURSE NO. PE 5  
 ELEMENTS OF PETROLEUM EXPLORATION

Duration: 20th -24th February, 2017 - 1st Run  
 12th - 16th June, 2017 - 2nd Run  
 30th Oct. - 3rd November, 2017 - 3rd Run

Course Objective:  
 To expose the participants with operations in the Petroleum Industry.

- Course Outline:
- Introduction to Basic Geology
  - Exploration Methods
  - Principles of Seismic Exploration
  - Origin of Petroleum/Petroleum Geology
  - Formation Evaluation
  - Sedimentology

For Whom: Non-technical staff from the public and private sectors.

Course Fee: N90,000.00 per participant.

COURSE NO. PE 6  
 TERMINAL OPERATIONS FOR CRUDE OIL EXPORT

Duration: 6th - 10th February, 2017 1st Run  
 5th - 9th June, 2017 2nd Run  
 6th - 10th November, 2017 3rd Run

Course Objective:  
 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.

- Course Outline:
- 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. crude oil terminal operations storage and measurement techniques. Crude oil terminal operations, Records/Documentation, Reporting Techniques and Procedures.
  - Meter proofing
  - Safety and fire fighting and 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.

For Whom:  
 Crude oil marketing and depot supervisors and managers, Crude Oil Marketing Terminal/Depot, Task Force Officials, Crude Oil exporters and their representatives.

Course Fee: N150,000.00 per participant.

COURSE NO. PE 7  
 CRUDE OIL CUSTODY TRANSFER OPERATIONS

Duration: 20th -24th February, 2017 - 1st Run  
 3rd - 7th July, 2017 - 2nd Run  
 13th - 17th November, 2017 - 3rd Run

Course Objective:  
 To update the skills, practices and principles of the course participants in petroleum measurement as it affects custody transfer in Nigeria.

- Course Outline:
- 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.

For Whom: Operating Engineers, Chemists, Laboratory Technicians, Operating Personnels, Terminal Operators etc.

Course Fee: N150,000.00 per participant.

COURSE NO. PE 8  
BASIC RESERVOIR ENGINEERING

Duration: 6th - 10th March, 2017 - 1st Run  
24th - 28th April, 2017 - 2nd Run  
11th - 15th September, 2017 - 3rd Run

Course Objective:

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.

Course Outline:

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

For Whom:

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

Course Fee: N100,000.00 per participant.

COURSE NO. PE 9  
BASIC WELL TESTING

Duration: 6th - 10th February, 2017 - 1st Run  
5th - 9th June, 2017 - 2nd Run  
30th Oct. - 3rd November, 2017 - 3rd Run

Course Objective:

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

Course Outline:

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

For Whom:

Geoscientists, technical personnel whose jobs have to do with well testing. Supervisors and technicians from servicing and operating companies.

Course Fee: N100,000.00 per participant.

COURSE NO. PE 10  
ENHANCED OIL RECOVERY

Duration: 20th Feb. - 3rd March, 2017 - 1st Run  
7th - 18th August, 2017 - 2nd Run

Course Objective:

On completion of the course, the participants would appreciate, up-date and increase their knowledge of water flooding operations. The course would also help the participants to get a better feel for the entire process of planning, development, management and recovery operation of a water-flood project.

Course Outline:

- Rock and fluid properties that control, displacement of oil and influence oil recovery.
- Mechanism of immiscible fluid displacement.
- Different flooding pattern
- Area sweep efficiency
- Injection Rate and Pressure.

- Prediction of water flood performance
- Water-flood surveillance.

For Whom: Reservoir production facilities, R&D and Operations engineers who are involved with some aspects of a new or existing well water-flooding project.  
Geoscientists and professionals who want to get a better feel of water-flooding operations.

Course Fee: N250,000.00 per participant.

COURSE NO: PE 11  
CRUDE OIL TREATMENT TECHNIQUES IN THE OIL AND GAS INDUSTRY

Duration: 5th - 9th June, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

Objectives:  
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.

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

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

Course Fee: N100,000.00 per participant

COURSE NO: PE 12  
DRILLING FLUID TECHNOLOGY - THEORY AND PRACTICE

Duration: 27th - 31st March, 2017 - 1st Run  
10th - 14th July, 2017 - 2nd Run

Objectives: 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.

Course Outline:

- 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

For Whom: Mud Engineers, Mud Loggers, Technologists, Technicians, etc.

Course Fee: N100,000.00 per participant

COURSE NO: PE 13  
WELL CONTROL

Duration: 6th - 10th March, 2017 - 1st Run  
12th - 16th June, 2017 - 2nd Run  
25th - 29th September, 2017 - 3rd Run

Course Objective:  
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.

Course Outline:

- 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 special problems
- Regulations

For Whom:

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

Course Fee: N180,000.00 per participant.

COURSE NO: PE 14

BASIC WELL COMPLETIONS

Duration: 6th - 10th February, 2017 - 1st Run  
19th - 23rd June, 2017 - 2nd Run  
16th - 20th October, 2017 - 3rd Run

Course Objective:

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 tubulars, identify completions equipments and knowing basic work over operations.

Course Outline:

- Introduction
- Completion types configuration
- Completion Tubulars
- Subsurface completion equipments
- Spacing out completion strings
- Basic work over operations

For Whom:

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

Course Fee: N100,000.00 per participant.

COURSE NO: PE 15

SEISMIC DATA ACQUISITION, DATA REDUCTION AND QUALITY CONTROL.

Duration: 3th - 7th April, 2017 - 1st Run  
11th - 15th September, 2017 - 2nd Run

Aim And Objective: At the end of the Course, Participants will

be able to execute 2D, 3D, 4D Seismic Survey and access the Quality of Field Data.

Course Outline:

- 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.

Designed For:

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

Course Fee: N90,000.00 per participant

COURSE NO: PE 16

BASIC FORMATION EVALUATION

Duration: 13th - 17th February, 2017 - 1st Run  
3rd - 7th July, 2017 - 2nd Run

Objective: 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.

Course Outline:

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

Designed For:

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

Course Fee: N90,000.00 per participant

COURSE NO: PE 17  
ELEMENTS OF LAND SURVEYING

Duration: 24th - 28th April, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

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

Course Outline:

- Introduction.
- Surveying Equipment.
- Surveying Techniques
- Computation
- Field Practice
- Safety.

For Whom: Construction Site Managers, Engineers, Geologists, Explorationists, Survey Assistants, etc.

Course Fee: N90,000.00 per participant

COURSE NO: PE 18  
ELEMENTS OF OPEN-CAST MINING OPERATIONS

Duration: 8th - 12th May, 2017 - 1st Run  
16th - 20th October, 2017 - 2nd Run

Aim And Objective: At the end of the Course, Participants will be able to understand Basic techniques in Open Cast Excavation.

Course Outline:

- Introduction.
- Basic Elements Of Excavation.
- Open Cast Excavation Tools/Equipment.
- Basic Fragmentation Techniques
- Mucking.
- Beneficiation Techniques.
- Ore Reserve Estimate.
- Safety.

For Whom: Managers and site construction Engineers, Supervisors, Field Operators, Foremen, Drillers, Drilling Assistants, Pickers, etc.

Course Fee: N90,000.00 per participant

COURSE NO: PE 19  
EXPLOSIVES AND ITS ENVIRONMENTAL EFFECTS.

Duration: 6th - 10th March, 2017 - 1st Run  
21st - 24th August, 2017 - 2nd Run

Aim And Objective: 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.

Course Outline:

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

For Whom: Quarry Managers, Engineers, Supervisors, Foremen, Blasters, Safety Officers, Drillers and Pickers, etc.

Course Fee: N90,000.00 per participant

COURSE NO: PE 20  
DRILLING TECHNOLOGY

Duration: 20th - 24th February, 2017 - 1st Run  
12th - 16th June, 2017 - 2nd Run  
21st - 24th August, 2017 - 3rd Run

Course Objective

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.

Course Outline

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

For Whom:

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

Course Fee: N120,000.00 per participant

# Petroleum Marketing And Business Studies

The department was created to adequately cater for the interest and training needs of the marketing sector of the petroleum industry. The department awards National Diploma and Higher national Diploma, and is made up of four sub units:

- Marketing
- Business administration
- Accounting
- Economic/Operations research.

On completion of the programme, the individual is capable to serve in related departments of the oil/gas and allied industries.

It established the petrol filling station and the super market for practical demonstrations and on the job development training for trainees. The super market was later transferred to PTI Consultancy Unit as a revenue generating unit of the Institute, even as the department continues to make use of the super market.

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COURSE NO. MA 1  
ACCOUNTING AND FINANCE APPRECIATION FOR  
NON-ACCOUNTANTS

Duration: 27th - 31th March, 2017 - 1st Run  
21st - 24th August, 2017 - 2nd Run

#### Course Objective:

To improve participants knowledge and skill in the application of accounting and finance principles in management decision-making.

#### Course Outline:

- Basic accounting systems and controls
- Interpretation of accounting and financial statements.
- Costing and decision-making
- Budgets and Budgetary Control
- Source of capital and working capital management.
- Capital Investment appraisal.

#### For Whom:

Managers, Administrators, Heads of Department, Senior Executive Officers and Business Entrepreneurs.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 2  
MATERIAL REQUIREMENTS PLANNING FOR STORES  
OFFICERS.

Duration: 27th - 31th March, 2017 - 1st Run  
17th - 21th July, 2017 - 2nd Run  
6th - 10th November, 2017 - 3rd Run

Course Objective:

At the end of the course, participants are expected to understand different techniques in material planning and its implementation in an organization.

Course Outline:

- A general overview of materials requirement planning.
- Materials Requirement planning techniques.
- The material production schedule.
- Bill of materials inventory status file.
- Materials distribution requirement planning.
- Adaptation in using material requirement planning.
- Company productive capacity requirement planning.
- Implementation of material requirement planning.

For Whom:

This course is mainly designed for store superintendents/supervisors and subordinate officers who are responsible for internal material requirement planning.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 3  
PROJECT MANAGEMENT FOR SUPERVISORS

Duration: 13th - 17th February, 2017 - 1st Run  
19th - 23rd June, 2017 - 2nd Run  
25th - 29th September, 2017 - 3rd Run

Course Objective:

At the end of the course, the participants are expected to appreciate the role of the project manager in the project life cycle. Furthermore, they will understand project evaluation review techniques and how to effectively monitor a project.

- Understand legal aspects of project management.
- Understand project investment analysis.
- Understand the human aspect of project management, and improving effectiveness of staff appraisal.
- Understand risk and uncertainty in project management.

Course Outline:

- Project Organisation/Life cycle.
- The role of a project Manager
- Network based scheduling techniques.
- Network convention PERT. Using probabilistic time estimates.
- Project Accounting And Monitoring.
- Monitoring and Controlling the Case.
- The use of computers in project management.
- Risk and Uncertainty in project management.
- Legal Aspects of project management.
- Project investment analysis.
- The Human Aspects of project management and improving effectiveness of staff appraisal.

For Whom:

For Project Managers and Supervisors who are directly responsible for project execution and supervision.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 4  
SUPERVISORY MANAGEMENT AND SKILLS  
DEVELOPMENT

Duration: 6th - 10th March, 2017 - 1st Run  
3rd - 7th July, 2017 - 2nd Run  
16th - 20th October, 2017 - 3rd Run

Course Objective:

The course is designed to provide participants with an opportunity to appreciate their role and significance as first line Supervisors and the role of man and equipment as crucial factors of production.

Course Outline:

- Principles of effective supervision in an organization.
- Quality control.
- Cost and budgetary control
- Introduction to Work and Method Study
- General Principles of Industrial Relations.
- Leadership and how to Motivate workers.
- Discipline and Grievance management.
- Effective Communication

Methodology

The course will be organized through Lecture case Studies, group discussions and films.

For Whom: Supervisor, Executive Officers, Foreman, Crew Leaders, Technical Officers in Factories, Business outfits and officers.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 5  
LOGISTICS TECHNIQUES FOR LOGISTICS OFFICERS

Duration: 20th - 24th February, 2017 - 1st Run  
8th - 12th May, 2017 - 2nd Run  
11th - 15th September, 2017 - 3rd Run

Course Objective:  
To enable participants acquire the knowledge of logistics techniques, including the clearing of materials and warehousing procedures.

Course Outline:

- Introduction to logistics packaging and logistics Clearing and forwarding of Materials.
- Clearing and forwarding Procedure
- Integrating with marketing and production
- Warehousing and stores Management.
- Unit load concept
- Supply chain functions
- Logistics and strategic management modes of transportation in Nigeria Materials Handling.
- Logistical Information Flow Elementary Statistics
- Customer Service Levels.

For Whom: Logistics Officers, Material Officers.

Format: Formal presentation, role plays, group discussion and syndicate exercises.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 6  
ELEMENTS OF BUSINESS LAW

Duration: 24th - 28th April, 2017 - 1st Run  
14th - 18th August, 2017 - 2nd Run

Course Objective:  
To equip participants with the knowledge of Business Law required to guide them in carrying out their duties.

Course Outline:

- Elements of contract
- Law of agency.
- Sale of goods.
- Vicarious liability.
- Negotiable instruments.

For Whom: Non-business trained Managers and Supervisors.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 7  
BUSINESS FINANCE FOR NON-ACCOUNTANTS

Duration: 3rd - 7th April, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

For Whom: Managers and Supervisors not trained in Business finance.

Course Outline:

- Arithmetic of Finance
- Capital budgeting under certainty and uncertainty
- Cost of Capital
- Leverage
- Risk and portfolio management.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 8  
MATERIALS MANAGEMENT

Duration: 13th - 17th March, 2017 - 1st Run  
19th - 23rd June, 2017 - 2nd Run  
30th Oct. - 3rd November, 2017 - 3rd Run

Course Objective:  
The course is intended to teach the participants the management of materials and other resources and to demonstrate the inter-relationship between departments and functions involved in the determination, handling and usage of materials, goods and services.



Course Outline:

- Know the various functions involved in the Management of Materials.
- Know the various departments that interact with materials management department and how they affect decisions.
- Understand supplies cycle.
- Understand materials management in supplies.

For Whom: Supervisors and other Senior Personnel in Materials Management Department working in the Petroleum Industry.

Methodology: A combination of formal presentation, group discussion and exercises.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 9  
STORES MANAGEMENT.

Duration: 13th - 17th February, 2017 - 1st Run  
10th - 14th July, 2017 - 2nd Run  
30th Oct. - 3rd November, 2017 - 3rd Run

Course Objective:

The main objective of the course is to expose the participants to the practical methods of Stores management, resources and the handling of equipment.

- Know how to manage resources.
- Know various handling and storage equipment.
- Understand the role of work study, operation research and ABS Theory in the store.
- Understand industrial relations in the store.
- Know Store-house operations and Stock maintenance.
- Understand the modules of distribution of goods and materials.

Course Outlines:

- Role and importance of stores management
- Managing Resources.
- Handling and storage equipment
- Store-house operations and maintenance.
- Materials Distribution.

For Whom: Senior Stores Officers in the Petroleum Industry

Methodology:

Lectures, Discussions, Stimulation Exercises, case Studies, role playing, Audio Visual Aids will be used to re-inforce teaching/learning.

Course Fee: N80,000.00 per participant

COURSE NO. MA 10  
MATERIALS PRODUCTION PLANNING AND CONTROL

Duration: 3rd - 7th April, 2017 - 1st Run  
16th - 20th October, 2017 - 2nd Run

Course Objective:

The main objective is to provide participants with more knowledge of production, planning process, to know the methods and how volumes are determined through sales forecast or operational requirements.

Course Outline:

- Acquire the knowledge of production planning process
- Understand production control methods and know how to initiate control measures when and where necessary.
- Acquire the principles and processes of production planning and control.
- Understand how to prepare production planning programmes.
- Know the techniques of work study
- Product development and planning.
- Production planning process.
- Production control measures.
- Principles and process of production planning.
- Planning production programmes.
- Techniques of work study.

For Whom: Senior Stores Officer and Senior Production Officers.

Format: A combination of formal presentation role playing, group discussion and syndicate exercises.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 11  
PURCHASING AND SUPPLY MANAGEMENT

Duration: 5th - 9th June, 2017 - 1st Run  
16th - 20th October, 2017 - 2nd Run

**Course Objective:**

At the end of the course the participants would:-

- Understand planning within the supply function
- Understand organisational set-up and staffing within the supply function.
- Understand control within the supply function
- Understand materials management concept.

**Course Outline:**

- Introduction to Purchasing in Organisation
- Planning the supply function/supply chain
- Purchasing Forms and Procedures
- Legal Considerations
- Organisational Structure for Purchasing and Supply
- Supply Market Sourcing
- Function of Suppliers in Purchasing Management
- Pricing and Payment for materials in purchasing
- Suppliers evaluation in purchasing
- Supply cycle
- Material Management and control
- Understanding Specification and Quality Assurance
- International Purchasing
- Purchasing ethics

**For Whom:**

Purchasing Senior Stores Officers in the Petroleum Industry.

**Methodology:** Discussion, stimulation exercises and case Studies would be used to reinforce teaching/learning.

**Course Fee:** N80,000.00 per participant.

**COURSE NO. MA 12**

**PHYSICAL DISTRIBUTION AND TRANSPORTATION MANAGEMENT.**

**Duration:** 3rd - 7th July, 2017 - 1st Run

**Course Objective:**

At the end of the course, the participants should be able to:

- Understand physical distribution and transportation plans
- Describe the role of routing, supply and scheduling in physical distribution and transportation
- Discuss trunking and local deliveries and the different modes of transportation.
- Know the contribution of operation research and rationalisation to stores, distribution and transportation.

- Know transport regulations and acts relating to facilities in physical distribution.
- Know the importance of containerisation in transportation.

**Course Outline:**

- Physical distribution routing and scheduling of Physical distribution.
- Trunking system of distribution.
- Application of operation research and Transportation distribution.
- Role of Insurance in transport and distribution.
- Legislation and acts relating to physical distribution.
- Organisational policy in transport and distribution.
- Importance of Containerisation logistics, materials.

**For Whom:** Senior Officers in transportation and procurement departments in the Petroleum Industry.

**Course Fee:** N80,000.00 per participant.

**COURSE NO. MA 13**

**SUPPLIES REGULATION IN NIGERIA.**

**Duration:** 17th - 21st July, 2017

**Course Objective:**

At the end of the course the participants should be able to:

- Know purchasing and supply structures, functions in the public sector.
- Understand public accountability as it affects purchasing and supply in the public sector.
- Know the nature and handling of dangerous materials in public sector: government stores, research institutions and other government agencies e.g. NEPA, water Board etc.
- Understand quality control as employed in public sector and government stores.

**For Whom:** Senior Stores Officers in the petroleum industry

**Course Outline:**

- Purchasing and Supply in Public Sector
- Purchasing and Supply Accountability (Government Rules and Regulation) for Scrap or Surplus Materials.
- Handling of Dangerous Materials.
- Quality Control in Government Stores.
- Contribution of Suppliers in Public Sector.

**Course Fee:** N80,000.00 per participant.

COURSE NO. MA 14  
LEGAL ASPECTS OF PURCHASING

Duration: 25th - 29th September, 2017

Course Objective:

At the end of the course the participants should be able to:

- Understand the legal implication of purchasing decisions.
- Know legislations affecting the sales of goods agreement.
- Understand laws of Agency.
- Understand the importance of patents, trademarks and copyrights laws.
- Have detailed knowledge of contracts of employment.
- Appreciate the need for the laws on carriage of goods.
- Understand the various laws relating to foods and drugs management, hire purchase and consumer protection.

Course Outline:

- Implications of Purchasing Decisions
- Law governing sale of Goods.
- Law of agency.
- Laws governing patents, trademarks and copyrights.
- Contracts of employment.
- Laws of carriage or goods.
- Insurance in purchasing activities.
- Law of negotiable instrument.
- Drugs, hire purchase and consumer Protection Law.

For Whom: Managers and Supervisors in material management. Logistics departments in the Petroleum Industry.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 15  
PROJECT AND CONTRACT MANAGEMENT

Duration: 13th - 17th March, 2017 - 1st Run  
23rd - 27th Oct., 2017 - 2nd Run

Course Objective:

At the end of the course the participants should be able to:

- Understand contract planning.
- Understand project organisation
- Know pre-contract considerations.
- Understand the steps in the acceptance of tenders
- Understand the tendering process in contract negotiation.

- Know conditions of contracts
- Understand project appraisal.

Course Outline:

- Contract planning.
- Project organisation appreciation
- Pre-contract consideration.
- Tendering acceptance.
- Tendering process in contract negotiation
- Contract conditions.
- Project appraisal.

For Whom: Project Manager, supervisors and engineers who are directly responsible for projects and contracts.

Methodology:

Lectures, stimulation exercises, audio visual aids would be used to reinforce teaching/learning.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 16  
HUMAN RESOURCES MANAGEMENT

Duration: 6th - 10th February, 2017 - 1st Run  
12th - 16th June, 2017 - 2nd Run  
16th - 20th October, 2017 - 3rd Run

Course Objectives:

At the end of the course the participants are expected to:

- Understand the use of job interviews.
- Know the procedure for selection decision making.
- Understand orientation procedures.
- Understand employee performance appraisal
- Understand employee discipline procedure.
- Understand compensation administration.

Course Outline:

- Job Interview selection procedure.
- Medical check and selection procedure
- Use of Employment References
- Orientation Procedure.
- Employee Performance Appraisal
- Training And Development Needs
- Employee Discipline.
- Administration of Compensation

For Whom: Senior Personnel Officers working in the Petroleum Industry.

Course Fee: N80,000.00 per participant.

COURSE NO. MA 17  
PRODUCTION MANAGEMENT

Duration: 20th - 24th February, 2017 - 1st Run  
5th - 9th June, 2017 - 2nd Run  
13th - 17th November, 2017 - 3rd Run

Course Objective:

At the end of the course, the participants are expected to:

- Appreciate the need for feedback and control in a productive system.
- Know the objective and problems of achieving inventory control.
- Understand the importance of work study and work measurement in productivity control.
- Know the method of production management as it applies to projects through network analysis.
- Understand the role of purchasing in production
- Appreciate the role of maintenance of facilities in production management.
- Understand the social responsibility of the production system.

Course Outline:

- Feedback and control in production
- Inventory control
- Work and method Study.
- Quality Control in production network analysis
- Purchasing and materials management.
- Maintenance culture social responsibility in production System.

For Whom: Engineers and Supervisors working in quality maintenance.

Course Fee: N80,000.00 per participant.

Course No.: MA 18  
BUSINESS PLANNING AND BUDGETING

Duration: 8th - 12th May, 2017

For whom: Managers, Supervisor's in Business Planning Budgeting, Cost Control and Audit Departments

Course Outline:

- Budgeting and Financial Planning,
- Budget Administration,
- Standards Setting and Administration,
- Technology and Budgeting

Course Objective: Participants will be able to integrate the principles of planning into the Budgeting process of their organisation

Course Fee: N80,000.00

Course No.: MA 19  
CONFLICT MANAGEMENT

Duration: 27th - 31st March, 2017 - 1st Run  
30th Oct. - 3rd November, 2017 - 2nd Run

For whom: Those who are managers or supervisor/Foremen in Organizations.

Course Objective: For Participants to understand how conflicts adversely affect organization and how to manage some.

Course Outline:

- Organizational Conflict
- Politics and the Organization
- Managing Organizational Change
- Conflict Management
- Strategies in Today's Organization
- Strategies for Resolving Organization Conflicts

Course Fee: N80,000.00

Course No.: MA 20  
MAKING THE DIFFERENCE IN ORGANIZATION  
COMPETENCE

Duration: 11th - 15th September, 2017

For whom: Managers, Officers and Supervisor's who play a key role in Organizational Decision Making.

Course Objective: To make Participants Realize the key Role of Organization in Today's World.

Course Outline:

- Organizing and Organizational Structure.
- Job Analysis, Design and Redesign
- Human Resources Management
- Material Resolve Management and Financial Management
- Job Description,
- Job Enlargement and Job Specification.

Course Fee: N80,000.00

COURSE NO: MA 21

HABITS OF HIGHLY EFFECTIVE/SUCCESSFUL PEOPLE

Duration: 5th - 9th June, 2017

Course Objective: To Equip Participants with the Habits of Highly Effective and Successful People in the Corporate World.

Course Outline:

- Values, Attitude and Moods of Successful People
- Enduring Characteristics and Personality traits of highly effective people.
- Factors that affect Managerial Perception
- The management of Innovation and Entrepreneurship
- Power: The Key to Leadership

For Whom: Top Management staff of corporate entities, middle level and supervisory management levels in organisations. Heads of sub-units, strategies business units and operation heads.

Course Fee: N80,000.00

Course No: MA 22

PRACTICAL NEGOTIATIONS

Duration: 10th - 14th July, 2017

Course Objective: For participants to ensure that their organizations derive maximum benefits from dealing with both external and internal parties.

Course outline:

- Negotiating Principles
- Culture and negotiation
- Collective and selective bargaining
- Role of superior and subordinates
- Corporate strategy.

Course fee: N80,000

Course No: MA 23

BUDGETING ANALYSIS AND FORECASTING

Duration: 19th - 23rd June, 2017 - 1st Run

18th - 22nd September, 2017 - 2nd Run

For whom: Managers and supervisors with the responsibility of budget planning and monitoring.

Course Objective: participants would be able to predict volume(s) cost and profits as these items affect their organizations attainment of set goals.

Course Outline:

- Overview of the budgeting process capital budgeting
- Profitability analysis
- Responsibility accounting
- Planning and forecasting

Course fee: N100,000

Course No: MA 24

STRATEGIC SOURCING OF RESOURCES

Duration: 5th - 9th June, 2017

For whom: Managers and Supervisors that are in the materials requisition and purchasing departments.

Course objective: to make participants understand the very important considerations when sourcing for resources for today's business organization.

Course outline:

- Sourcing
- Negotiation
- Managing the supplier
- Pricing and cost analysis
- Legal issues

Course Fee: N80,000

Course No: MA 25  
NEW EMPLOYEE ORIENTATION PROGRAMME

Duration: 27th - 31st March, 2017 - 1st Run  
6th - 10th November, 2017 - 2nd Run

For whom: Those performing Human resource functions in their organizations.

Course Objective: to ensure that participants are able to draw up, implement and revolve orientation programmes for new employees.

Course Outline: The Concept Orientation

- The Effective Orientation Programme
- Human Resource
- Administration and Orientation
- Orientation and Operational Staff

Course Fee: N80,000.00

Course No: MA 26  
THE EMPOWERING LEADER

Duration: 27th - 31st March, 2017  
For Whom: Heads of units /Section/Departments in Organizations.

Course Objective: To Ensure That Participants Are Able To Bring Out The Best From The Subordinate So As To Achieve Organizational Goals More Effectively.

Course Outline;

- Leadership As A Concept
- Personality Traits Of A Successful Manger
- Necessary Values, Attitudes And Moods Of A Manger
- Use Of Motivation
- Sources and consequences of Stress That Mangers Experience

Course fee: N80,000

Course No: MA 27  
TIME & STRESS MANAGEMENT

Duration: 19th - 23rd June, 2017

For Whom: Heads Of Various Departments/Sections and Human Resources Personnel.

Course Objective: To Ensure That Participants Understand That Time Is A Critical Resources.

Course Outline: An Overview Of Time Management

- Time Effective & Efficiency
- Delegation And Training
- Priorities Setting And Scheduling

Course fee: N80,000

Course No: MA 28  
TOTAL QUALITY MANAGEMENT

Duration: 24th - 28th April, 2017

For Whom: Mangers And Supervisors Who Are Sectional /Departmental Heads

Course Objective: To Make Participants Understand The Principles of Total Quality Management And How To Apply Them In Practice.

Course Outline; The Concept TQM

- TQM And Quality
- TQM And Organizational Culture
- Strategic Management
- Customer by results
- Management by Results
- Management by Objectives.

Course fee: N80,000

Course No: MA 29  
INVENTORY MANAGEMENT.

Duration: 19th - 23rd June, 2017

For Whom: Managers, Officers Ad Supervisors Involved in stores and ware housing Management.

Course Objective: Participants Would Understand the Role of Proper Inventory Management in Today's Business.

Course Outline:

- Functions And Types of Inventories
- Material Classification And Pricing
- Warehouse

- Stores Management
- Purchasing for Business Organization.

Course fee: N80,000

Course No: MA 30  
WORKING IN TEAMS

Duration: 3rd - 7th July, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run

For Whom: Managers And Supervisors That Lead Section/Departments in Business Organizations.

Course Objective: To Make Participants Understand And Use The Dynamics Involved in Team Building To Foster Efficient Operations Of Their Sections/Departments And To Attain Organizational Efficiency.

Course Outline:

1. Types of Groups in Organizations
2. The Stages of Group(s) Development.
3. Various characteristics Of Groups
4. Model Group Interaction
5. The Team -Driven Company
6. Team Spirit Building

Course fee: N80,000

Course No: MA 31  
TRAINING THE TRAINER

Duration: 5th - 9th June, 2017  
For Whom: All Those Involved In Staff Training and Staff Development.

Course Objective: Participants Would Be Able To Prepare Staff Training And Development Programmes To Reflect Current And Future Organizational Needs.

Course Outline:

- Determining Training Needs
- Setting Training Objectives
- Developing Training Objectives
- Developing Training Courses

- Training Techniques
- Evaluation of Training Effectiveness.

Course fee: N80,000

Course No.: MA 32  
LEADERSHIP TECHNIQUES FOR MANAGERS AND SUPERVISORS.

Duration: 13th - 17th February, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run

For whom: Managers, Supervisors and Officers that lead various sections/department and communicate various organisational policies.

Course Outline:

- Leadership styles in an organisation
- Effective communication in Leadership
- Leadership influence in an Organisation
- Leading Effective Meeting
- Managing yourself

Course Objective: At the end of the course, participants are expected to Acquire the many diverse leadership skills needed by today's managers to succeed.

Course Fee: N80,000.00

Course No: MA 33  
CRUDE OIL MARKETING

Duration: 20th - 24th February, 2017 - 1st Run  
30th Oct. - 3rd November, 2017 - 2nd Run

For whom: Crude Oil marketing depot supervisors and Managers, Task Force Officers, Crude Oil Exporters and their representatives.

Course Outline:

- The Nigerian Crude Oil export market and procedures
- Crude Oil Marketing in Nigeria, development, trends and prospects
- The Law of Contract and Sales 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.

Course Objective: On completion of this course, participants would appreciate, update and improve upon their knowledge skills and abilities in crude oil marketing.

Course Fee: N100,000.00

#### MA 34: SERVICE STATION MANAGEMENT

Duration: 13th - 17th February, 2017 - 1st Run

#### Who Should Attend?

Service station managers and dealers.

#### Subjects Covered Include:

Introduction to a service station and the oil industry  
Health Safety & Environment  
Customer service quality  
Site Image & Layout  
Staff management  
Site Operations  
Wet stocks accounting  
Site book-keeping  
Site maintenance & Housekeeping  
Products & Service  
Merchandizing  
Advertising & Sales promotion  
Security  
Legal requirements  
Oil company retail sales managers and sales representatives

Course Fee: N100,000.00



# Electrical/Electronic Engineering Department

The Electrical/Electronics Engineering department is one of the oldest departments in the Institute and has seven (7) laboratories and four (4) workshops.

Presently, the department runs Electrical & Electronic technology (ND) and three options at the Higher National Diploma level. Namely: Power & Machines, Electronic & Telecommunications and Instrumentation & Control.

At the inception of PTI, the department was involved in Electricity generation for the Institute and played a major role in the training

of the pioneer staff of Eleme Petrochemicals and Kaduna refinery.

The entire team of competent and qualified staff has continued to reactivate and develop most of the facilities in the Institute, notably is the successful reactivation of the process simulator in Petroleum process department, fabrication of light dependant resistor, simulation of automation of water chlorination and fabricated a variable transformer (Variac) which is currently being used in the department for training.

We are committed to excellence and technological sustainability in the oil, gas and allied industries.

COURSE NO. EE 1  
ELECTRICAL MACHINES MAINTENANCE

Duration: 6th - 10th March, 2017 - 1st Run  
8th - 12th May, 2017 - 2nd Run  
30th Oct. - 3rd November, 2017 - 3rd Run

Course Objective:  
To up-date the participants knowledge of the working principles of Electrical Machines.

Course Outline:

Basic Principles:

- Conductor in magnetic field
- Generated e.m.f. flux linkage induce e.m.f
- Torque and output power
- Electromagnetic induction
- Turn/Voltage ratios
- Load Condition.

Classification:

- Static machines, rotating machines.
  - Synchronous motor, generators.
  - Direct current machines, General Motor
  - Power Voltage and Current transformers
- Constructional Features:
- Mechanical parts, Electrical parts
  - Magnetic core, Stator Rotor (Armature)
  - Primary and Secondary Windings (Transformer)
  - Stator and Rotor Winding (Armature)

Operations:

- Excitation Frequency Speed Torque Power
- Non-load and full-load characteristics
- Losses Efficiency
- Voltage regulations
- Starting Methods.

Applications:

- Uses in terms of their characteristics and Performances.
- Industrial Drives
- Types of service (continuous, limited, time, intermittent)
- Area of application [(uses) outdoor, indoor, classified area].
- Transportation of electrical energy from place to place (Power transformer)
- For monitoring purposes (Instrument transformers)

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

Course Fee: N90,000.00 per participant.

COURSE NO. EE 2  
FLOW MEASUREMENT

Duration: 13th – 17th February, 2017 - 1st Run  
7th – 11th August, 2017 - 2nd Run  
9th – 13th October, 2017 - 3rd Run

Course Objective:  
To provide a working knowledge of procedure for flow measurement.

Course Outline:

Physical Fluid Properties:

- Definition
- Fundamentals of Fluid Mechanics
- Flow Pattern
- Velocity of Flow equipment

Flow Measurement Techniques:

- Review of basic techniques
- Orifice Flow Meter
- The Orifice Primary Element
- Secondary Flow Element
- General guidelines in the installation and use of DP Flow Meters
- Positive displacement Meters
- Applications
- Installation and maintenance
- Turbine Flow Meters

The Calibration of Flow Meters

- System accuracy and instrument repeatability
- Calibration of liquid flow meter volumetric method
- Gravimetric methods
- Calibration of Gas Flow Meters
- PVT method Gas Flow Computers

Economics of Flow Measurement

- Consultants' View
- Participants' View

For Whom:

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

Course Fee: N150,000.00 per participant.

COURSE NO. EE 3  
BASIC INSTRUMENTATION (2 Weeks)

Duration: 6th - 17th February, 2017 - 1st Run  
8th - 19th May, 2017 - 2nd Run  
16th - 27th October, 2017 - 3rd Run

Course Objective:

To expose and acquaint participants with the principles and practice of measurement of control variables in an industrial process.

Course Outline:

(i) INTRODUCTION AND INTERPRETATION OF INSTRUMENTATION

- Industrial Instruments
- Why do we use instruments to Measure and Control?

(ii) PRESSURE

Definitions:

- Gauge pressure
- Absolute pressure
- Vacuum pressure
- Pressure Measurement
  - (a) Mechanical Pressure Elements:
    - Manometer
    - Bellows
    - Bourdon Spring Elements
    - Vacuum Guages
  - (b) Electrical Pressure Element:
    - Resistance Type Strain Guages
    - Inductance Type
    - Capacitive Type.

(iii) TEMPERATURE:

(a) Units of Temperature

(b) (i) Temperature Measurements

- Mechanical temperature measurement
- Liquid-filled thermometers;
- Bimetallic thermometers
- Pressure spring thermometers.

(ii) Electrical Temperature Measurement

- Resistance Thermometers
- Thermocouples
- Millivoltmeter Pyrometer.

(iv) LEVEL MEASUREMENTS

Mechanical Measurement:

- Constant displacement
- Variable displacement

Pneumatic Measurement

- The Bubbler technique.

Electrical Measurement:

- Immersions electrodes

- Capacitor Type guages
- Sonic Type measurement
- Radiation Type measurement

(iv) FLOW MEASUREMENT:

Mechanical Measurement:

- The Venturi tube
- The Dall tube
- The Flow nozzle
- The Orifice plate
- The Variable area meter
- Turbine meters
- Positive displacement Meter

Electrical Measurement:

- Magnetic flow meter

(v) TELEMETRY

For Whom: Instrument, Mechanical, Electrical Technicians and Technologists.

Course Fee: N180,000.00 per participant.

COURSE NO. EE 4

FUNDAMENTALS OF ELECTRONICS/APPLICATIONS

Duration: 5th - 9th June, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

Course Objective: 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 Outline:

Circuit Components:

- Resistor
- Capacitors
- Diodes
- Transistor as an amplifier.

D. C. Electronics:

- Rectification
- Power Supplies
- Semi-Conductor devices
- Operational Amplifiers.

A. C. Electronics:

- A. C. Amplifications.

#### Electronic Circuits:

- Inverting/Non-Inverting amplifiers
- Differential input amplifiers
- Differential output Amplifiers
- Voltage regulators.
- Differentiator
- Integrator
- Multivibrators
- Signals Filters
- High power Electronics
- Digital / Electronics
- Some others.

#### Electronic Test Equipments:

- Multimeters (Analogue Digital)
- Signal generators
- Calibrators
- Oscilloscopes
- Practical exercises
- Videos and demonstrations.

Course Fee: N90,000.00 per participant

#### COURSE NO. EE 5

#### DIGITAL ELECTRONICS AND LOGICS

Duration: 3rd - 7th April, 2017 - 1st Run  
14th - 18th August, 2017 - 2nd Run

Course Objective: To provide a working knowledge of switching devices, digital circuitry logic, operation, flow charts and task specification.

#### Course Outline:

- Electronic switches
- Diode Resistor Logic (DRL)
- Transistor Transistor Logic (TTL)
- Complementary Mosfet (CMOS)
- Emitter Coupled Logic (ECL)
- Integrated Injection Logic (I<sup>2</sup>L)
- Interfacing Logic Families
- Totem Pole, Open Collector and Tri-State Logic
- Number Systems and Codes
- Boolean Algebra
- Quinne McCluskey's Algorithm
- Karnaugh Map
- Combinational Circuits.
- Sequential Circuits

#### ■ Trouble-shooting of Digital Circuits.

For Whom: Engineers, Technologist and Technicians in the Industries. Instructors, Technologists and Technicians in academic and research institutes.

Course Fee: N90,000.00 per participant.

#### COURSE NO. EE 6

#### INSTRUMENTATION (PNEUMATICS)

Duration: 6th – 17th February, 2017 - 1st Run  
10th – 17th July, 2017 - 2nd Run  
30th October – 10th November, 2017 - 3rd Run

#### Course Objective:

At the end of the course, the participants should be able to:

- 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
- 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.

#### Course Outline:

- 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
- 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

For Whom:

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

Course Fee: N180,000.00 per participant.

COURSE NO. EE 7  
ELECTRICAL MAINTENANCE

Duration: 12th - 16th June, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

Course Objective:

At the end of the course, the participants should be able to:

- Understand general objective of electrical maintenance
- Understand the principles of maintenance management
- Understand the principles of record keeping and stock taking.
- Understand the use of test instruments and equipment.

Course Outline:

- Development 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 keeping records.
- The need for keeping record of tools and equipment.
- The need for proper record keeping of materials.
- The need for proper record keeping of maintenance work done.

- The need to prepare ordering schedule for replacing and replenishing of materials and tools.
- The principles and the need for stock checking.
- Testing.
- 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.
- Explain the 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.

For Whom: Electrical Engineers, Technologists, Technicians, Mechanical Technicians and Technologists involved in the maintenance of Electrical Systems Equipment and devices.

Course Fee: N90,000.00 per participant.

CODE: EE 8  
ELECTRICAL RISK PREVENTION

Duration: 5th - 9th June, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

Course Objectives

At the end of this booster course, the participant will be able to:

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

Course Outline

- Concept of electricity
- Classification of electrical materials
- Direct current
- Alternating current

- 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

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

Venue: PTI Conference Centre, Shell Block.

Course Fee: N90,000

CODE: EE 9

POWER SYSTEM PROTECTION

Duration: 13th - 17th March, 2017 - 1st Run  
14th - 18th August, 2017 - 2nd Run

Course Objective: at the end of the course, the participants would be able to

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

Course outline

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

For whom?

- Electrical engineers
- Electrical technologists/instructors
- Electrical technicians
- Electrical consultants
- Contractors.

Course Fee: N90,000

CODE: EE 10

REWINDING OF ELECTRIC MOTORS.

Duration: 8th - 12th May, 2017

Course objective: At the end of the course the participant should be able to identify and rewind burnt electric motors

Course outline:

- 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.

For whom: For electrical engineers and technicians in oil and manufacturing industries,

Course fee: N90,000

CODE: EE 11

ELECTRICAL INSTALLATION WORKS AND MAINTENANCE.

Duration: 15th - 19th May, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run

Course Objective

At the end of the booster course, the participants will be able to:

- 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.

Course Outline

- Safety and safety regulations.
- Electrical working diagrams.
- Domestic Surface Wiring Techniques.
- Domestic Conduit Wiring.
- Protecting Electrical Devices.
- Testing Of Domestic Installations.
- Ducts And Trunkings.

- Types Of Cables, Sizes and Selection.
- Electrical Machines And Equipment Installation And Control Methods.
- Simple Maintenance Methods.

For Whom:

Technicians, Maintenance Personnel and Workshop Personnel and Their Assistants.

Course Fee: N90,000

CODE: EE 12

### ELECTRONIC INSTRUMENTATION

Duration: 3rd - 7th April, 2017 - 1st Run  
 3rd - 7th July, 2017 - 2nd Run  
 23rd - 27th October, 2017 - 3rd Run

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

Course Objective: At the end of the course, the Participants will:

- Be able to chose 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

Course Outline:

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

Course Fee: N120,000.00

COURSE NO. EE 13 (2 Weeks)

### CONTROLLERS AND PROCESS CONTROL SYSTEMS IN THE PETROLEUM AND ALLIED INDUSTRIES

Duration: 8th - 19th May, 2017 - 1st Run  
 7th - 18th August, 2017 - 2nd Run  
 9th - 20th Oct., 2017 - 3rd Run

COURSE OBJECTIVES: The objectives of this course are but not limited to:

- 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 gvarious controllers available in the industry.
- To introduce participant to Microprocessor and Micro controller.
- To get participant acquainted with the knowledge of programmable logic controllers and programmable logic devices.
- To get participant to learn about computer controlled and supervised production system.

COURSE CONTENTS:

- 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 PLC and Programmable Logic Devices
- Microprocessor and Microcontrollers and their application in Process Control
- Distributed Process Control System in the Industries
- SCADA Controlled Systems

FOR WHICH INDUSTRIES: (i) All the industries involved in Oil and Gas Prospecting, Production, Refining and Distribution (Upstream and Downstream operation in the Oil and Gas Industries) (ii) Steel, Cement, Food Processing, Pharmaceutical and Textile Industries among others (iii) Higher Institution of learning.

FOR WHOM: (i) Production Engineers and Technologist (ii) Electrical/Electronic and Instrumentation Personnel in-charge of Installation and maintenance of facilities in production plants (iii) Mechanical, Petroleum Process and instrument engineers (iv) 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, polytechnics and collages of education in the field of Electrical, Mechanical, Petroleum and Chemical Engineering etc.

COURSE FEES: N180,000

COURSE NO. EE 14  
INSTRUMENTS, POWER, GROUNDING & ISOLATIONS

Duration: 6th – 10th February, 2017 - 1st Run  
10th – 14th July, 2017 - 2nd Run

Course Outline:

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

For Whom:

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

Course Fee: N120,000.00 per participant.

COURSE NO. EE 15  
INSTRUMENT CALIBRATION

Duration: 27th March – 7th April, 2017 - 1st Run  
5th – 16th June, 2017 - 2nd Run

Course Outline:

- Calibration Overview
- Field Calibration
- Pressure Calibration
- Differential Pressure Calibration
- Level Calibration
- Calibrating in hazardous locations
- Temperature Calibration
- Loop Calibration
- Smart Device Calibration
- Analytical Instrument calibration (Laboratory Instrument)

For Whom:

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

Course Fee: N180,000.00 per participant.

COURSE NO. EE 16  
PROGRAMMABLE LOGIC CONTROLLERS (PLC) MISTIBUSH

Duration: 8th – 19th May, 2017 - 1st Run  
21st August – 1st September, 2017 - 2nd Run

Course Outline:

- MIF Logic Instructions
- Comparison Instructions
- Conversion Instructions
- Counter Instructions
- Data Block Instructions
- Logic Control Instructions
- Timer Instructions
- Program Control Instructions
- Practical:
  - ▶ Basic Level Controlling (Tank 1)
  - ▶ Level Controlling Tank (1 & 2)
  - ▶ Tank Filling Sequence
  - ▶ Simulating Batch Sequencing

For Whom:

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

Course Fee: N180,000.00 per participant.

COURSE NO. EE 17  
INSTRUMENT MAINTENANCE

Duration: 15th – 19th May, 2017 - 1st Run  
11th – 15th September, 2017 - 2nd Run

Course Outline:

- Brief history of Instrumentation and Control Maintenance
- Fundamental principles of instrument maintenance
- Comprehending maintenance personnel composition
- Pressure and few instruments, installation, maintenance and repairs
- Instruments Air Requirements
- Temperature devices installation maintenance and repairs
- Troubleshooting size for primary elements and final control device
- Analytical Instrument (Laboratory Instrument) maintenance and repairs

For Whom:

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

Course Fee: N150,000.00 per participant.

COURSE NO. EE 18  
GAS AND FIRE DETECTOR

Duration: 11th – 15th September, 2017 - 1st Run



#### Course Outline:

- Hazardous Atmosphere
- Basic Air Monitoring (CO<sub>2</sub>, CO, O<sub>2</sub>, H<sub>2</sub>S, CH<sub>4</sub>)
- Hazard Properties terms
- Flash point and ionization potential of various combustible gases.
- Gas Detectors Types
- Calibration of Gas Detectors
- Gas Detector Selection.
- Gas Detector Safety
- Field Monitoring
- Detection Sequence
- Hazard and Risk Assessment

#### For Whom:

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

Course Fee: N120,000.00 per participant.

COURSE NO. EE 19

#### FLOW MEASUREMENT AND LEVEL MEASUREMENT

Duration: 20th – 24th February, 2017 - 1st Run  
8th – 12th May, 2017 - 2nd Run

#### Course Objective:

At the end of the course, the participants should be able to:

- Have a working knowledge of procedure and flow and level measurement
- Describe the working principles of various flow and level measurement instrument
- Carry out experiments on various flows and level measurement unsupervised
- Troubleshoot instruments when faced with difficulties.

#### Course Outline:

- Based flow meters
- Venturi tubes and basic principles
- Orifice plates
- Differential detectors
- Proper installation of pressure measuring equipment
- High accuracy flow measurements
- Flow meters
  - Variable-area flow meters
  - Velocity based flow meters
  - Turbine flow meters
  - Magnetic flow meters
  - Ultrasonic flow meters
  - Coriolis flow meters
  - Thermal based mass flow meters

- Positive displacement flow meters
- Insertion flow meters
- Conventional liquid meter provers design and construction
- Process and instrument stability
- Continuous level measurement
- Level gauge (sight glasses)
- Hydrostatic pressure
- Bubblers systems
- Transmitter suppression and elevation
- Tank expert systems
- Displacement
- Echo
- Ultrasonic level measurement
- Radar lever measurement
- Capacitive method of level measurement
- Radiation

#### For Whom:

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

Course Fee: N120,000.00 per participant.

COURSE NO. EE 20

#### PRESSURE MEASUREMENT AND TEMPERATURE MEASUREMENT

Duration: 6th – 10th March, 2017 - 1st Run  
19th – 23rd June, 2017 - 2nd Run

#### Course Objective:

At the end of the course, the participants should be able to:

- To provide a working knowledge of the procedure for pressure measurement and temperature measurement.
- Describe the operating principles of various instruments used for pressure and temperature measurement.
- Know how to calibrate various temperature and pressure sensors.

#### Course Outline:

- Continuous pressure measurement
- Manometers
- Mechanical pressure elements
- Piezoresistive (strain gauge) sensors
- Differential pressure transmitters
- Valve manifolds
- Filled pulse lines
- Purged impulse lines
- Process and instrument stability

- Continuous temperature measurement
- Bi-Metallic strips
- Filled-bulb temperature sensors
- Thermistors and resistive temperature detectors (RTDs)
- Thermocouple
- Laws of intermediate metals
- Software compensation
- Burnout detection
- Optical temperature sensing
- Temperature sensor accessories
- Process instrument suitability for pressure and temperature control

For Whom:

Engineers, Technologist and Technicians in industries. Instructors, Technologists and Technicians in academic and research institutes

Course Fee: N120,000.00 per participant.

COURSE NO. EE 21

PRESSURE MEASUREMENT AND CONTROL

Duration: 20th February – 3rd March, 2017 - 1st Run  
16th – 29th October, 2017 - 2nd Run

Course Objective:

At the end of the course, the participants should be able to:

- Have a working knowledge of procedure for flow, level, temperature and pressure measurement
- Describe the working principles of various flow and level measurement instrument
- Carry out experiments on various flows and level measurement unsupervised
- Troubleshoot instruments when faced with difficulties
- Acquiring practical skills on the basic process variable.

Course Outline:

- Pressure based flow meters
- Venturi tubes and basic principles
- Orifice plates
- Differential detectors
- Proper installation of pressure measuring equipment
- High accuracy flow measurements
- Flow-Meters
  - Variable-area flow meters
  - Velocity based flow meters
  - Turbine flow meters
  - Magnetic flow meters
  - Ultrasonic flow meters
  - Coriolis flow meters
  - Thermal based mass flow meters

- Positive displacement flow meters
- Insertion flow meters
- Conventional liquid meter provers design and construction
- Process and instrument stability
- Continuous level measurement
- Level gauge (sight glasses)
- Hydrostatic pressure
- Bubblers systems
- Transmitter suppression and elevation
- Tank expert systems
- Displacement
- Echo
- Ultrasonic level measurement
- Radar level measurement
- Capacitive method of level measurement
- Radiation
- Continuous pressure measurement
- Manometers
- Mechanical pressure elements
- Continuous pressure measurement
- Manometers
- Mechanical pressure elements
- Piezoresistive (strain gauge) sensors
- Differential pressure transmitters
- Valve manifolds
- Filled pulse lines
- Purged impulse lines
- Process and instrument stability
- Continuous temperature measurement
- Bi-Metallic strips
- Filled-bulb temperature sensors
- Thermistors and resistive temperature detectors (RTDs)
- Thermocouple
- Laws of intermediate metals
- Software compensation
- Burnout detection
- Optical temperature sensing
- Temperature sensor accessories
- Process instrument suitability

For Whom:

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

Course Fee: N180,000.00 per participant.

COURSE NO. EE 22  
BASIC PLC PROGRAMMING (SIEMENS, ALLEN BRADLEY AND MITSUBUSHI)

Duration: 12th – 16th June, 2017 - 1st Run  
9th – 13th October, 2017 - 2nd Run

Course Objective:

Introduce participant to the architecture and operation of programmable logic controller and show how PLC can be programmed for simple logic control.

Course Outline:

- PLC Architecture
- Input module
- Output module
- Mounting and connection
- PLC programming language
- BIT control instruction
- Logic control instruction
- Program scan
- Memory organisation
- Mode of operation
- Communication over network

For Whom: Engineers, Technologists and Technicians in process industry.

Course Fee: N150,000.00 per participant.

COURSE NO. EE 23  
INSTRUMENT MAINTENANCE AND REPAIR

Duration: 13th – 17th March, 2017 - 1st Run  
14th – 18th August, 2017 - 2nd Run

Course Objective:

Update the participant's knowledge on maintenance and troubleshooting of electronic and process equipment.

Course Outline:

- Types of maintenance operations
- Organisation 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
- Testing electronic components
- Troubleshooting skills in instruments

- Troubleshooting approaches
- Maintenance of process instrument (control valve, transmitters, Regulator etc)
- Troubleshooting scenarios
- Calibration of gauge analog transmitters and smart transmitter, switches inclusive.

For Whom: Engineers, Technologists and Technicians.

Course Fee: N200,000.00 per participant.

COURSE NO. EE 24  
ADVANCE PLC PROGRAMMING (SIEMENS, ALLEN BRADLEY AND MITSUBUSHI)

Duration: 8th – 19th May, 2017 - 1st Run  
18th – 29th September, 2017 - 2nd Run

Course Objective:

To give detailed knowledge of PLC programming to participants in the Oil and Gas and Allied Industries.

Course Outline:

- PLC Architecture
- Input module
- Output module
- Mounting and Connection
- PLC Programming Language
- BIT Control Instruction
- Logic Control Instruction
- Comparison Instruction
- Status Bit Instruction
- Integer Math Instruction
- Program Control Instruction
- Data Block Instruction
- Timer Instruction
- Counter Instruction
- Program Scan
- Memory Organisation
- Mode of Operation
- Communication over Network

For Whom: Engineers, Technologists and Technicians working with PLC.

Course Fee: N250,000.00 per participant.

# Petroleum Analysis Laboratory

The Petroleum Analysis Laboratory represents a giant step towards the fulfillment of the objectives of the institute in producing technicians and skilled personnel required for the oil/gas and allied industries.

The laboratory is equipped with modern facilities similar to those found in most refineries around the world. In addition to crude oil and gas analysis, water samples as well as soil samples are equally analyzed.

The department has ultra violet/visible and infra red spectrophotometers, liquid absorption spectrophotometers, gas and liquid chromatographs and equipment for environmental testing. Each of these equipment can satisfy the needs of several ASTM procedures, which makes the laboratory ultimately capable of carrying out approximately 100 ASTM procedures

The laboratory is capable of fractional distillation, physical and chemical properties of each fraction and testing specification of motor gasoline, kerosene, diesel, jet fuel and heavy oil.

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COURSE NO. PAL 1

PRACTICAL TRAINING IN POTABLE AND EFFLUENT WATER ANALYSIS.

Duration: 3th - 7th April, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run

Course Objective:

At the end of the course, participants should be able to:

- Determine the parameters spelt out in the course outline
- Identify and use the appropriate equipment needed for each test
- Ascertain the quality of both potable and effluent water through analysis of appropriate parameters.

Course Outline: Identification and use of equipment to determine the following parameters:

- PH, conductivity and turbidity
- Total suspended solid and Total Dissolved solids
- Hardness as carbonate and bicarbonate
- Salinity as total chloride
- Nitrates
- Oil and Grease
- Chemical Oxygen demand (COD)
- Metal content of water

For Whom: Chemists, Water Engineers, Ministry and Parastatal workers, Laboratory technicians, Laboratory assistants, Oil and allied company workers etc.

Course Fees: N90,000.00

COURSE NO. PAL 2  
PRACTICAL TRAINING IN CRUDE OIL ANALYSIS.

Duration: 13th - 17th February, 2017 - 1st Run  
12th - 16th June, 2017 - 2nd Run  
6th - 10th November, 2017 - 3rd Run

Course Objective: At the end of the course, participants should be able to:

- Identify the equipment used in the determination of the parameters shown in the course outline
- Describe the processes involved in determining each of the parameters
- Carry out the determination of each of the parameters
- Identify the standard method (e.g. ASTM) determination for each parameter.

Course Outline:

- Density, specific gravity and API gravity (Hydrometer method ASTM-D 1298)
- Water and sediment in crude oil (centrifugal Method ASTM D – 4007)
- Water in crude oil by distillation (Dean and Stark method ASTM D – 4006)
- Pour point of Petroleum Oils (ASTM D – 97)
- Vapour pressure of petroleum products (Reid Method ASTM D - 4323)
- Flash point by Pensky – Mortens Closed Tester (ASTM D – 93)
- Salt in Crude oil (Electrometric Method ASTM D – 3230)
- Metal content in crude oil (Analysis through ashing)

For Whom: Laboratory Managers, Laboratory staff, petroleum marketers, Chemists, Law enforcement agents etc.

Course Fees: N90,000.00

COURSE NO. PAL 3  
PRODUCTION, SPECIFICATION AND QUALITY OF LUBRICATING OIL

Duration: 27th - 31st March, 2017

Course Objective: At the end of the course, participants should be able to:

- Formulate different types of lubricating oil from base oils and additives
- Determine performance parameters of lubricating oil
- Identify and use the appropriate equipment needed for each test.
- Ascertain the quality of lubricant and grease through analysis
- Know and apply all the quality control measures during manufacture/analysis of lubricating oil.

Course Outline: Explanation of lubrication and types of lubricants. Identification and use of equipment for the following parameters:

- Specific Gravity/API Gravity
- Viscosity
- Flash Point
- Water content by Distillation
- Total Base Number
- Penetration Test
- Pour point
- Conradson carbon
- Ash content
- Metals in lubricating oil
- Aniline point

For Whom: Chemical, Quality Control Officers in petroleum laboratories etc.

Course Fee: N90,000.00 per participant.

COURSE NO. PAL 4  
ENVIRONMENTAL SAMPLING AND ANALYSIS

Duration: 5th - 9th June, 2017 - 1st Run  
10th - 14th July, 2017 - 2nd Run

Course Objective: At the end of the course, participants should be able to:

- Prepare sampling and Analysis plan
- Design and use chain of custody and sample tracking log forms.
- Prepare soil, water and air samples for analysis
- Analyse soil, water and air samples using appropriate techniques

Course Outline:

- Sampling of soil, water, air
- Sample preparation for analysis of soil, water and air
- Analysis of soil, water and air samples.

For Whom: Environmental analysis, Ministry of Environment, Law enforcement agents etc.

Course Fees: N90,000.00

COURSE NO. PAL 5

QUALITY CONTROL/QUALITY ASSURANCE FOR ANALYTICAL LABORATORY (Meeting ISO 17025 Requirements)

Duration: 24th - 28th April, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

Course Objective: At the end of the course, participants should be able to:

- Develop a "Quality Assurance" manual and design an implementation and management program
- Design and implement "Quality Assurance record keeping requirements
- Prepare laboratory for accreditation to ISO 17025
- Identify components of standard operating procedures and develop additional SOP's
- Conduct an effective internal audit and much more

Course Outline:

- Selecting and Validation of analytical methods or standard operating procedures.
- Performance criteria in Quality Assurance Procedures
- System suitability and specification
- Quality Control and Proficiency testing
- Accreditation requirement
- Documentation and Review

For Whom: Laboratory Technicians, Laboratory analysts, Laboratory Managers etc.

Course Fees: N90,000.00

COURSE NO. PAL 6

BASIC GAS CHROMATOGRAPHY

Duration: 19th - 23rd June, 2017

Course Objective: At the end of the course, participants should be able to:

- State the features of the chromatogram
- Identify the components of a gas chromatographic system
- Perform qualitative and quantitative analysis

Course Outline:

- Instrumentation
- Features of the chromatogram
- Theory
- Components of a gas chromatographic system
- Qualitative analysis
- Hyphenated techniques
- Special Applications

For Whom: Chemists from industry, government and academia. Participants should have a background in general chemistry. Experiences with instrumental analysis is helpful but not required.

Course Fee: N90,000.00

# Mechanical Engineering Department

## INTRODUCTION

Mechanical Engineering Department is one of the vibrant departments in the Petroleum Training Institute. It is endowed with highly qualified and dedicated staff for the training of Technicians and Technologists required in the Petroleum and Allied Industries.

The vision and mission statements of the department are:

- (i) VISION STATEMENT: To become an acclaimed Centre of Excellence in producing cutting edge Mechanical Engineering Technicians/Technologists in Africa.
- (ii) MISSION STATEMENT: To produce cutting edge Mechanical Engineering Technicians/Technologists that will meet the ever-growing needs of the Petroleum and Allied Industries.

The programmes available include National Diploma in Mechanical Engineering Technology and Higher Diploma in two option, namely Power Plant Engineering Technology and Manufacturing Engineering Technology.

## COURSE NO. ME 1 PUMP AND VALVE MAINTENANCE

Duration: 27th - 31th March, 2017 - 1st Run  
14th - 18th August, 2017 - 2nd Run  
30th Oct. - 3rd November, 2017 - 3rd Run

Course Objective:  
To enable participants to understand basic principles and operations of pumps and valves. Diagnose faults and remedies.

Course Outline:

- General Principles of Machinery Maintenance.
- Fundamental Principles of Fluid Flow and Control.
- Pump Operations and Maintenance.
- Valve Drives and Transmission.
- Pipes and Piping.
- Automatic Control Systems.
- Pumps and valve Maintenance Demonstration.

For Whom: Marine Engineers, Marine Superintendents, Supervisors, Technicians, Engineers and Technologists in Oil and Gas and Allied Industries, etc.

Course Fee: N90,000.00 Per participant.

COURSE NO. ME 2  
MAINTENANCE MANAGEMENT

Duration: 6th - 10th March, 2017 - 1st Run  
12th - 16th June, 2017 - 2nd Run  
9th - 13th October, 2017 - 3rd Run

Course Objective: To expose participants to modern maintenance management principles and good practice in industry.

Course Content:

- Concepts in Maintenance Management.
- Maintenance Organisation.
- Maintenance Strategy.
- Maintenance Policy.
- Design and Facilities Maintenance (Project Improvement Maintenance).
- Computerized Maintenance Management.
- Maintenance Cost Control.
- Maintenance Evaluation.

For Whom: Maintenance Engineers, Marine Engineers, Marine Superintendents, Technicians, Technologists, Supervisors and Managers, etc.

Course Fee: N90,000.00 per participant.

COURSE NO. ME 3 (2 Weeks)  
BASIC ENGINEERING GRAPHICS COMMUNICATION  
AND AUTOCAD (DRAUGHTING)

Duration: 27th March - 7th April, 2017 - 1st Run  
5th - 16th June, 2017 - 2nd Run  
16th - 29th October, 2017 - 3rd Run

Course Objective: To expose participants to basic engineering drawing and Auto CAD.

Course Outline:

- Introduction to Engineering Graphics.
- Basic Conventional Drawing
- Engineering Conventions.
- Scales.
- Sectional Views.
- Assembly Drawing
- AutoCAD-Principles and Applications.
- Practical Exercises (Hands On).

For Whom: Engineers and Technicians, Trainees, Supervisors and Draftsmen, etc.

Course Fee: N200,000.00 per participant.

COURSE NO. ME 4  
GENERAL SURFACE TECHNOLOGY/ENGINEERING

Duration: 13th - 17th February, 2017 - 1st Run  
19th - 23rd June, 2017 - 2nd Run

Course Objective: Participants will be able to know the basic principles and practice of Surface Technology/Engineering..

Course Outline:

- General Principles of Surface Technology/Engineering.
- Process Selection.
- Organic Surface Coatings
- Inorganic Surface Coatings.
- Surface Technology Equipment.

For Whom: Technicians, Supervisors, Craftsperson, etc.

Course Fee: N90,000.00 per participant.

COURSE NO. ME 5  
AUTOMOTIVE ELECTRICAL WIRING

Duration: 22nd - 26th May, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run



Course Objective: To expose participants to fundamentals of Auto-Electrical Wiring Theory and Practice.

Course Outline:

- Principles of Auto-Electricity.
- Methods of Circuit Wiring
- Cable Colour Coding.
- Cable Size / Rated Capacity.
- Auto-Wiring Practice / Repairs.
- Electrical Circuit Review Safety.
- Advances in Auto-Wiring.

For Whom: Auto-Electrical Technicians Supervisors and other related Electrical and Mechanical Engineering Personnel.

Course Fee: N90,000.00 per participant.

#### COURSE NO. ME 6 DIESEL ENGINE MAINTENANCE

Duration: 3rd - 7th April, 2017 - 1st Run  
19th - 23rd June, 2017 - 2nd Run  
30th Oct. - 3rd November, 2017 - 3rd Run

Course Objective: To give the participants a complete picture of General Diesel Engine Specification, Diesel Engine Components, and their Functions/Maintenance.

Course Outlines:

- General Principles/Overview of Internal Combustion Engines (ICE).
- Operation of Diesel Engines.
- Classification of Diesel Engines.
- Construction and Basic Design.
- Details of Design Parts.
- Combustion Chamber Types.
- Fuel Injectors and Injection Systems
- Atomizing Fuel
- Cooling System
- Exhaust System
- Filters-Air and Fuel
- Stating and Cooling System
- Governors
- Maintenance-Reconditioning Diesel Engine/Workshop Activity
- Maintenance-Tune-Up and Trouble Shooting/Workshop Activity
- Maintenance/Workshop Activity/Demonstration
- Glossary of Technical Terms and Technical Data

For Whom:

Marine Engineers, Marine Superintendents, Diesel Engine Technicians/Fitters, Supervisors and other Engineering Personnel interested in Diesel Engine.

Course Fee: N90,000.00 per participant

#### COURSE NO. ME 7 ENGINE LUBRICATIONS

Duration: 20th - 24th February, 2017 - 1st Run  
10th - 14th July, 2017 - 2nd Run  
9th - 13th Oct., 2017 - 3rd Run

Course Objective:

To acquaint participants with the Fundamentals of Engine Lubrications

Course Content:

- Basic Principles/Science of Lubrication
- Types of Lubricants (Liquid and Solid)
- Development and Physics of Lubrication
- Fuels and Lubricants Development.
- Motor Oil Formulation
- Application, Handling and Storage of Lubricants
- Lubricants Engine and its Oil
- Lubricating Systems and Devices
- Workshop Demonstration of Lubricating Systems.

For Whom: Marine Engineers, Marine Superintendents, Engineering and Technical Personnel and all those who are interested in Lubrication Work..

Course Fee: N90,000.00 per participant.

#### COURSE NO. ME 8 MACHINE VIBRATIONS (Monitoring & Control)

Duration: 8th - 12th, May 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run  
6th - 10th November, 2017 - 3rd Run

Course Objective:

Participants will appreciate the Fundamentals of Machine Vibrations

Course Outline

- Introduction and Causes of Machinery Failures
- Fundamental Principles of Vibrations

- Causes of Vibration
- Effects of Vibration.
- Vibration Control Strategy.
- Vibration Monitoring.
- Machine Alignment.
- Lab Demonstration Activity.

For Whom: Engineers, Technologists, Technicians and all those interested in Vibration.

Course Fee: N90,000.00 per participant.

**COURSE NO. ME 9  
VEHICLE BATTERY MAINTENANCE**

Duration: 3rd - 7th April, 2017 - 1st Run  
7th - 11th August, 2017 - 2nd Run  
23rd - 27th October, 2017 - 3rd Run

Course Objective: Participants will appreciate the Fundamentals of Battery Maintenance.

Course Outline:

- Fundamentals of Electrical Principles
- Batteries and Constructional Features
- Battery Charging System
- Battery Maintenance/Workshop Activity.

For Whom: Battery Users and Sellers, Operators, Auto-Electricians, etc.

Course Fee: N90,000.00 per participant.

**COURSE NO. ME 10  
MECHANICAL TESTING OF ENGINEERING MATERIALS.**

Duration: 15th - 19th May, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run

Course Objective: To acquaint participants with the Fundamentals of Mechanical Testing (Theory and Practice).

Course Outline:

- Fundamental Principles of Mechanical Testing of Engineering Materials.
- Mechanical Properties, Testing and Behaviour of Materials
- Selection of Materials
- Hardness Testing and Equipment
- Creep and Measurement Apparatus

- Torsion and Testing Machine
- Impact Energy and Charpy / Izod Tester
- Universal Materials Testing Machine
- Mechanical Testing Demonstration
- Lab Activity.

For Whom: Laboratory Attendance/Technicians, Engineering Workshop Technicians/Supervisors, and other Technical/Engineering Personnel interested in Mechanical Testing, Shipyard Officers, Quality Control Officers of Manufacturing Company, etc.

Course Fee: N90,000.00 per participant.

**COURSE NO. ME 11  
COMPRESSOR PROCESSES**

Duration: 13th - 17th March, 2017 - 1st Run  
19th - 23rd June, 2017 - 2nd Run  
16th - 20th October, 2017 - 3rd Run

COURSE OBJECTIVES: To expose participants to The Basic Principles, design and application of compressors, Trouble shooting of Compressor, Faults and Maintenance technology.

COURSE CONTENTS:

- Introduction to Compressors
- Basic Principles and design
- Problem Solving Techniques
- Applications
- Case Studies
- Maintenance/Worshop activities

FOR WHOM: Engineers, Technologist and Technicians in Engineering Organisation and Oil & Gas Industries.

COURSE FEES: N100,000

**COURSE NO. ME 12  
MAINTENANCE OF HYDRAULIC/PNEUMATIC MACHINES**

Duration: 13th - 17th March, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run

COURSE OBJECTIVES: To expose participants to all Hydraulic/Pneumatic related Machines.

COURSE CONTENTS:

- Fundamental Principles of Fluid Flow

- Overview of maintenance principles
- Hydraulic/Pneumatic control Valves, Gauges, Prime movers and accessories.
- Hydraulic/Pneumatic Pressure generators and pressure consumers.
- Common problems and solutions associated with hydraulic/Pneumatic machines.

FOR WHOM: Marine Engineers, Marine Superintendents, Engineering and Technical Personnel in Industries.

COURSE FEES: N90,000

COURSE NO. ME 13  
 ROTATING EQUIPMENT MAINTENANCE (PUMPS AND COMPRESSORS)

Duration: 3rd - 7th April, 2017

COURSE OBJECTIVES: To expose participants to the applications and maintenance of pumps and compressors.

COURSE CONTENTS:

- Pumps: Principles and classification
- Operating problems and solutions to pumps
- Compressor: Classification and Maintenance
- Bearing maintenance and Installation
- Vibration and condition monitoring of Pumps and compressor
- Corrosion of rotating equipment.

FOR WHOM: Engineers, Technologists and Technicians in Engineering Organisation and Oil & Gas Industries.

COURSE FEES: N90,000

COURSE NO. ME 14  
 OPERATIONS AND MAINTENANCE OF MATERIALS HANDLING EQUIPMENT

Duration: 15th - 19th May, 2017 - 1st Run  
 23rd - 27th October, 2017 - 2nd Run

COURSE OBJECTIVES: To expose participants to the operations and maintenance of materials handling equipment.

COURSE CONTENTS:

- General Overview of maintenance
- Operations and maintenance of cranes
- Operations and maintenance of Forklifts
- Operations and maintenance of Conveyors
- Operations and maintenance of Hydraulic/Pneumatic cylinders.

FOR WHOM: Technologists, Technicians, Craftsmen in Engineering Organizations.

COURSE FEES: N90,000

# 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 Equipments Maintenance

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

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COURSE NO. WE 1  
WELD DEFECTS

Duration: 13th - 17th February, 2017 - 1st Run  
17th - 21th July, 2017 - 2nd Run

Course Objective:

Participants will be able to:-

- Recognise surface and internal defects in fusion 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.

For Whom: Welding inspectors/supervisors and production personnel responsible for weld quality.

Course Fee: N90,000.00 per participant.

COURSE NO. WE 2  
INSPECTION PRACTICES IN WELDING.

Duration: 20th - 24th February, 2017 - 1st Run  
 14th - 18th August, 2017 - 2nd Run  
 23rd - 27th October, 2017 - 3rd Run

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 an 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

For Whom: Welding Inspectors, Supervisors and Project Engineers and quality control staff associated with welding.

Course Fee: N120,000.00 per participant.

COURSE NO. WE 3  
PRACTICAL INDUSTRIAL RADIOGRAPHY.

Duration: 8th - 12th May, 2017 - 1st Run  
 11th - 15th September, 2017 - 2nd Run

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.

For Whom: Radiographers, Inspectors, and quality control personnel.

Course Fee: N120,000.00 per participant.

COURSE NO. WE 4  
HEALTH AND SAFETY IN WELDING.

Duration: 24th - 28th April, 2017 - 1st Run  
 21st - 24th August, 2017 - 2nd Run  
 30th Oct. - 3rd November, 2017 - 3rd Run

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

Course Outline:

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

For Whom: Fabrication Managers/Supervisors, Safety Personnel and Welding Inspectors.

Course Fee: N90,000.00 per participant.

COURSE NO. WE 5  
WELDING OF PRESSURE VESSELS

Duration: 5th - 9th June, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

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 weldability 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.

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

Course Fee: N110,000.00 per participant.

COURSE NO. WE 6 (3 Weeks)  
PIPE WELDING

Duration: 5th - 23rd June, 2017

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
- Methods of Pipe Welding
- Testing of Welded Pipes
- Accident reporting
- Safety management.

For Whom: Practicing Welders, Welding Inspectors and Supervisors.

Course Fee: N500,000.00 per participant.

COURSE NO. WE 7  
ESSENTIALS OF WELDING DESIGN

Duration: 6th - 10th February, 2017 - 1st Run  
10th - 14th July, 2017 - 2nd Run

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 (Weld Procedure Specifications)
- Design exercises.

For Whom: 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.

Course Fee: N90,000.00 per participant.

COURSE NO. WE 8  
PLASTIC WELDING

Duration: 27th - 31st March, 2017 - 1st Run  
11th - 15th September, 2017 - 2nd Run

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.

For Whom: Welding Technicians, Welding Supervisors, Site Engineers/Supervisors and Production Engineers.

Course Fee: N90,000.00 per participant.

COURSE NO. WE 9

QUALITY ASSURANCE/CONTROL IN WELDING.

Duration: 13th - 17th March, 2017 - 1st Run  
10th - 14th July, 2017 - 2nd Run

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/QC 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.

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

Course Fee: N90,000.00 per participant

COURSE NO. WE 10

ALUMINIUM WELDING (TUNGSTEN INERT GAS (TIG))

Duration: 6th - 10th March, 2017 - 1st run  
9th - 13th October 2017 - 2nd run

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

Course Outline:

- Safety in Welding
- Metallurgy of Aluminium
- Aluminium Welding Technology
- Practical Welding of Aluminium
- Testing of Welded Specimens.

For Whom: Practising Welders and Supervisors

Course Fee: N180,000.00 per participant.

COURSE NO. WE 11

SAFETY IN INDUSTRIAL RADIOGRAPHY

Duration: 5th - 9th June, 2017 - 1st Run  
30th Oct. - 3rd November, 2017 - 2nd Run

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.

For Whom: Radiographers, Inspectors, Instructors and Safety Quality Control Personnel.

Course Fee: N90,000.00 per participant.

COURSE NO. WE 12

WELDING APPRECIATION/ELECTRIC ARC WELDING

Duration: 3rd - 7th April, 2017 - 1st Run  
18th - 21st September, 2017 - 2nd Run

Aim:

To acquaint participants with the arc welding processes, their features, application, weld design, weld procedure specification and weld testing and evaluation techniques.

Course Objectives:

- On completion participants will be able to:-
- Identify the arc welding processes, their features equipment and process.
- Carry out an 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 arc welding Processes.
- Arc welding processes
- Weld design
- Arc welding procedure specification
- Weld testing and evaluation techniques.

For Whom: Production and Maintenance Engineers, Welding Inspectors and Supervisors.

Course Fee: N90,000.00 per participant.

#### COURSE NO. WE 13

#### WELDING OF DUPLEX AND OTHER STAINLESS STEELS

Duration: 24th - 28th May, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run

AIM: This course introduces basic metallurgy of the stainless steels. It highlights the weldability 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.
- Practicals.

#### Course Objectives:

Those who have attended will 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.
- Recognise how stainless steel corrosion resistance can be degraded.
- Apply their knowledge to welding of dissimilar joints and weld overlays

For Whom: Production Engineers, Welding Supervisors, Welding Technicians/Technologists, QA/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.

Course Fee: N300,000.00 per participant.

## Safety & Underwater Response

#### COURSE NO: WO 14

#### SWIMMING AND OFFSHORE PERSONAL SURVIVAL TECHNIQUES (3 weeks)

Duration: 20th Feb. - 10th March, 2017 - 1st Run  
23rd Oct. - 10th November, 2017 - 2nd Run

#### Course Objectives:

To provide participant with the necessary skills and confidence to survive in the event of any ship mishap and installation. Participant will develop skill in the use of both life-saving 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 Liferrafts
- 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 and Uncontrolled abandonment procedure).
- Release of Lifeboat/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 ENVIRONMENT DEFINITIONS 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

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

Course Fee: N300,000.00 per participant.

#### COURSE NO. WO 15

#### DIVING APPRECIATION (6 Weeks)

Duration: 6th March - 15th April, 2017

#### Course Objective:

To provide normal academic knowledge and current techniques of diving to enhance the divers 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.

For Whom: Old and experienced Divers without formal training.

Course Fee: N500,000.00 per participant

#### COURSE NO. WO 16

#### UNDERWATER CUTTING AND WELDING (5 Weeks)

Duration: 24th April - 26th May, 2017 (5 weeks) 1st Run  
25th Sept. - 27th October, 2017 2nd Run

#### Course Objective:

To afford the participants the knowledge and skills to practice underwater welding and cutting and other maintenance operations.

#### Course Content:

Underwater Welding Methods and Processes Includes:

- Flux shielded Arc
- Gas shielded Arc
- 1 atmosphere welding
- Planning
- Safety.

Underwater Cutting Methods and Processes Includes:

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

For Whom: Practicing diving technicians.

Course Fee: N500,000.00 per participant.

COURSE NO: WO 17

### SAFETY IN UNDERWATER TASK AND ACTIVITIES

Duration: 13th - 17th February, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

#### 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.

For Whom: Middle management personnel, Engineers, Divers, Supervisors, Non-divers Technologists and divers

Course Fee: N100,000.00 per participant.

COURSE NO: WO 18

### BASIC OFFSHORE SAFETY INDUCTION AND EMERGENCY TRAINING (BOSIET)

Duration: 5th - 9th June, 2017 - 1st Run  
18th - 21st September, 2017 - 2nd Run

#### 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 will 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
- Life saving 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

Class Size: Minimum 8

Course Fee: N400,000.00 per participant

# Petroleum And Natural Gas Processing Department

## INTRODUCTION:

The department is responsible for the training of the technicians and for the Oil/Gas and allied industries. The department consist of three units specialized in the following;

- Petroleum refining.
- Gas processing technology.
- Petrochemical/Polymer technology.

## PROGRAMMES

The department offers programs at both National diploma (ND) and Higher National diploma (HND) levels in Petroleum and Gas processing Engineering Technology.

The programs are designed to produce Technicians and Technologists who should be able to carry out basic functions in:

- Production and processing of crude Oil & Gas.
- Refining and analysis of Oil & Gas/products.
- Transportation and distribution of petroleum products.
- Chemicals/petrochemicals production.

On completion of the programs, the graduate should be able to:

- Produce and interprets process and instrument diagrams (P&ID).
- Undertake quality control tests of crude Oil and Gas products.
- Design pipeline distribution networks and supervise product distribution activities.
- Work as external plant and control room operations.

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### COURSE NO PP 1 BASIC REFINING OPERATIONS

Duration: 3rd - 7th April, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

#### Course Objective:

To give staff essential back-ground to effective operation of the process units in a refinery.

Course Outline:

- 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.

For Whom: Process Operators, Maintenance Technicians and Technologists, Oil Movement Operators, Shift Supervisors. Quality Technicians, Refiners in Vegetable Oil Plants, etc.

Course Fee: N90,000.00 per participant

COURSE NO. PP 2

NATURAL GAS GATHERING, TRANSMISSION, DISTRIBUTION AND MANAGEMENT

- Options: 1. Gas gathering 2. Gas Processing  
3. Gas Transmission 4. Gas Distribution  
5. Gas Management

Duration: 13th - 17th February, 2017 - 1st Run  
14th - 18th August, 2017 - 2nd Run

Course Objective:

To expose participant to surface operations in associated and non-associated petroleum gas handling and simple principles of Gas Plant Management.

Course Outline:

- Review and overview of world natural gas scenario.
- Characterisation and compositions of natural gas and related derivatives.
- Hydrocarbon fluids mechanics
- Natural gas reservoirs/Subsurface behaviour of hydrocarbon fluids.
- Natural gas operation (Surface/Subsurface)
- Natural gas production and techniques
- Rotating machines and their Application/Optimization in natural gas transport.
- Gathering/Pipelines system design, Conceptualization sizing and topography and route selection.
- Gas Pipelines simulation/Network Analysis.
- Natural gas conditioning, processing, scrubbing, etc.
- Principles and practice of hydrocarbon fluids separation.
- The unit operation of the separator system mechanism.
- Gas dehydration and compression systems.
- Technical problems in natural gas transmission system and management/control.

For Whom: 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.

Course Fee: N100,000.00 per participant.

COURSE NO: PP 3

SAFE APPLICATION OF PLANT UTILITIES

Duration: 20th - 24th February, 2017 - 1st Run  
21st - 25th August, 2017 - 2nd Run

Course Objective: To acquaint staff with plant utilities generally and introduces them to their application with emphasis on safety for efficient and effective production

Course Outline:

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

For Whom: Utility Operators in industries such as Refinery, Petrochemicals, plastics, textile, breweries, Oil companies, blending plants, water boards, electricity generators, glass Industry, Steel plants etc.

Course Fee: N120,000.00 per participant.

COURSE NO: PP 4

ADVANCED NATURAL GAS GATHERING, TRANSMISSION, DISTRIBUTION AND MANAGEMENT.

- Options: 1. Gas gathering 2. Gas Processing  
3. Gas Transmission 4. Gas Distribution  
5. Gas Management

Duration: 15th - 19th May, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run

Course Objective:

To provide participants with advanced training in Gas Engineering Operation. To provide participants with adequate theoretical and practical Gas Systems design.

To provide Management training in managing a gas operation enterprise development.

Course Outline:

- Applied Natural-Gas Systems, Thermodynamics.
- Laws
- Real Gas Laws and Super Compressibility

- Units Operations in Natural Gas Operations Engineering.
- Applied Heat Transfer and Thermodynamics processes in natural gas Engineering
- Natural Gas Engineering
- Natural Gas Reservoirs and Gas Wells
- Natural Gas Wells Inflow Performance and Evaluation.
- Applied Compressor Engineering Operations and Management.
- Natural Gas Pumping Units
- Auto Refrigeration and Non-Compressor Operations in Natural Gas Operations and System Management.
- Energy Economics in Natural Gas Engineering Operations.
- Natural Gas Systems Process Dynamics and Control.
- Natural Gas Proccession and Conditioning.
- Natural Gas Projects Development and Economics.
- Natural Gas Project Management
- L.P.G. Systems Management
- L.N.G. Systems Development and Management.
- Natural Gas Policy formulation
- Fundamentals of Petroleum Laws
- Managing 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.

For Whom:

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"

Course Fee: N150,000.00 per participant

COURSE NO. PP 5  
WATER TREATMENT PROCESSES FOR INDUSTRIAL AND DOMESTIC USE

Duration: 19th - 23rd June, 2017 - 1st Run  
13th - 17th November, 2017 - 2nd Run

Course Objective:

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 Outline:

- Introduction to water chemistry and analysis
- Water quality and Pollution
- Selection of water sources
- Basic unit operations/processes in water treatment.
- Aeration
- Congulation/Flocculation
- Sedimentation
- Softening
- Filtration
- Stabilization
- Adsorption
- Disinfection
- Iron removal
- Preliminary treatment
- Chemical requirement estimate
- Corrosion, protection in the water industry
- Boiler-Water treatment
- Cooling water treatment
- Water treatment waste disposal
- Safety in water treatment plants
- Process and quality control in water treatment
- FEPA (Federal environmental Protection Agency) laws on Industrial/domestic waste water treatment and discharge.
- Review of FEPA standard on wasted water treatment and discharge.
- Water Utilisation/management
- Recycling of waste water e.g. cooling water
- Basic unit operations/processes in waste water recycling (e.g. Cooling Lower
- Economics of waste water recycling

For Whom: Process Engineer, Plant Operators, Production, Supervisors, Power plant and Utilities Engineers/ Operators, Government Agencies with duties related to energy etc.

Course Fee: N100,000.00 per participant.

COURSE NO. PP 6  
LABORATORY MANAGEMENT

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

Duration: 3rd - 7th July, 2017

Course Objective: On completion of the course the participants should be able to:

- 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.
- Understand record keeping in the laboratory.
- Understand the importance of discipline in the laboratory.

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

For Whom: Laboratory Supervisors, Laboratory Superintendent, Chemists, Laboratory managers sand other middle and senior cadres of industrial, and specialized laboratories.

Course Fee: N100,000.00 per participant.

COURSE NO: PP 7  
FUNDAMENTALS OF REACTOR DESIGN AND OPERATION

Duration: 8th - 12th May, 2017 - 1st Run  
25th - 29th September, 2017 - 2nd Run

Course Outline:

- Classification of reactors,
- Modeling of a reactor (plug flow),
- Design equations for isothermal adiabatic and non-adiabatic reactors,
- Design for multiple reactions,
- Evaluation of existing reader performance,
- Optimum operating conditions for reactors.

AIMS: At the end of this course the participants should be able to;

- Develop a mathematical model for a plug flow reactor.
- Select appropriate design equation for a plug flow reactor.
- Use design equation to predict reactor performance.

FOR WHOM: Engineers, Production mangers, Scientists and Technologists.

Course Fee: N90,000.00 per participant

COURSE NO: PP 8  
COMPUTER APPLICATION IN REACTOR DESIGN & SIMULATION

Duration: 27th - 31st March, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run

Course Outline:

Numerical methods of solution for reactor design equation, Fundamentals of computer programming, Software packages for solving reactor design equations. Computer simulation of reactors.

Course Fee: N100,000.00

COURSE NO: PP 9  
FUNDAMENTALS OF MULTI-COMPONENT DISTILLATION

Duration: 12th - 16th June, 2017

Course Outline:

- Basic principles of multi component distillation.
- Dew and bubble points determination,
- Modeling of a multi component distillation column,
- Plate to plate methods in design and evaluation of performance of distillation columns,
- Short cut methods for multi component distillation columns design and performance evaluation,
- Determination of optimum operating conditions for multi component distillation columns.
- Simulation of multi component distillation columns.

AIMS: At the end of this course the participants should be able to:

- Develop a mathematical model for a multi-component distillation column.
- Select appropriate method for design of multi-component distillation column.
- Use design equations to predict performance of multi-component distillation column.

FOR WHOM: Engineers, Production mangers, Scientists and Technologists.

Course Fee: N100,000.00

COURSE NO: PP 10  
COMPUTER APPLICATION IN MULTI COMPONENT  
DISTILLATION COLUMN DESIGN AND SIMULATION

Duration: 14th - 18th August, 2017

Course Outline:

- Fundamentals of computer programming,
- Software packages for multi component distillation columns,
- Computer methods in multi-component distillation,
- Simulation of multi component distillation columns.

AIMS: At the end of this course the participants should be able to:

- Use computer for the design of a multi-component distillation column.
- Use computer for simulation of multi-component distillation column.
- Use computer to evaluate performance of an existing multi-component distillation column

FOR WHOM: Engineers, Production managers, Scientists and Technologists.

Course Fee: N100,000.00 per participant

COURSE NO: PP 11  
HEAT EXCHANGER DESIGN SIMULATION AND  
OPERATION

Duration: 13th - 17th February, 2017 - 1st Run  
30th Oct. - 3rd November, 2017 - 2nd Run

Course Outline:

- Classification of heat exchangers,
- Heat exchanger design equations,
- Algorithm for heat exchanger design,
- Evaluation of performance of an existing exchanger.
- Simulation of heat exchangers.

AIMS: At the end of this course the participants should be able to:

- Develop a mathematical model for heat exchangers.
- Select appropriate design equations for heat exchangers.
- Use design equations to predict heat exchanger performance.

FOR WHOM: Engineers, Production managers, Scientists and Technologists.

Course Fee: N90,00.00 per participant

COURSE NO: PP 12  
COMPUTER APPLICATION IN HEAT EXCHANGERS DESIGN  
AND SIMULATION

Duration: 9th - 13th October, 2017

Course Outline:

- Fundamentals of computer programming,
- Computer method for heat exchangers design,
- Evaluation of heat exchanger performance.
- Computer simulation of heat exchangers.

AIMS: At the end of this course the participants should be able to:

- Use computer for the design of heat exchangers.
- Use computer for simulation of heat exchangers.
- Use computer to evaluate performance of an existing heat exchanger.

FOR WHOM: Engineers, Production managers, Scientists and Technologists.

Course Fee: N100,000.00 per participant

COURSE NO: PP 13  
FUNDAMENTALS OF SOLVENT EXTRACTION

Duration: 6th - 10th March, 2017  
11th - 15th September, 2017

Course Outline:

- Selection of solvent,
- Solvent recovery,
- Modeling of an extraction column Optimum operating conditions for solvent extraction columns,
- Economic consideration in design of solvent extraction columns.

AIMS: At the end of this course the participants should be able to:

- Develop a mathematical model for solvent extraction column.
- Select appropriate solvent for an extraction process.
- Use design equation to predict an extraction process performance.

FOR WHOM: Engineers, Production managers, Scientists and Technologists.

Course Fee: N100,000.00 per participant

COURSE NO: PP 14  
COMPUTER APPLICATION IN DESIGN AND SIMULATION  
OF SOLVENT EXTRACTION COLUMN

Duration: 24th - 28th April, 2017

Course Outline:

- Fundamentals of computer programming,
- Algorithm for solvent extraction column design,
- Computer design of solvent extraction column,
- Computer simulation of solvent extraction column

AIMS: At the end of this course the participants should be able to:

- Use computer for the design of solvent extraction column.
- Use computer for simulation of solvent extraction column.
- Use computer to evaluate performance of an existing solvent extraction column.

FOR WHOM: Engineers, Production managers, Scientists and Technologists.

Course Fee: N100,000.00 per participant

COURSE NO: PP15  
FUNDAMENTALS OF GAS ABSORPTION AND STRIPPING

Duration: 10th - 17th July, 2017 - 1st Run  
30th Oct. - 3rd November, 2017 - 2nd Run

Course Outline:

- Basic principles of gas absorption and stripping,
- Absorption without chemical reaction (physical absorption),
- Absorption with chemical reaction (chemical absorption),
- Steam stripping,
- Modeling of absorption and stripping columns,
- Optimum conditions for absorption / stripping columns.

AIMS: At the end of this course the participants should be able to:

- Develop a mathematical model for gas absorption/stripping columns.
- Use design equations to predict the performance of gas absorption/stripping columns.

FOR WHOM: Engineers, Production managers, Scientists and Technologists.

Course Fee: N90,000.00 per participant

COURSE NO: PP 16  
COMPUTER APPLICATION IN DESIGN AND SIMULATION  
ABSORPTION COLUMN FOR OIL AND ALLIED  
INDUSTRIES

Duration: 3rd - 7th April, 2017

Course Outline:

- Fundamentals of computer programming,
- Algorithm for design of absorption column,
- Computer design of absorption/stripping columns,
- Computer simulation of absorption columns.

AIMS: At the end this course the participants should be able to:

- Use computer for the design of gas absorption/stripping columns.
- Use computer for simulation of gas absorption/stripping column.
- Use computer to evaluate performance of an existing gas absorption/stripping column.

FOR WHOM: Engineers, Production managers, Scientists and Technologists.

Course Fee: N100,000.00 per participant

COURSE NO: PP 17  
BASIC THEORY OF PROCESS DYNAMICS CONTROL AND  
SIMULATION FOR OIL AND ALLIED INDUSTRIES

Duration: 11th - 15th September, 2017

Course Outline:

- Basic principles of process control,
- Mathematical modeling of control systems,
- Transient response of control systems,
- Frequency response of control systems,
- Stability of control systems,
- Optimum controller settings.

AIMS: At the end of this course the participants should be able to:

- Develop a mathematical model for a control system.
- Predict response of a control system to changes in process variables.
- Select an appropriate setting for a controller.

FOR WHOM: Engineers, Production managers, Scientists and Technologists.

Course Fee: N90,000.00 per participant



COURSE NO: PP 18  
COMPUTER APPLICATION IN PROCESS DYNAMIC  
CONTROL AND SIMULATION FOR OIL AND ALLIED  
INDUSTRIES

Duration: 13th - 17th February, 2017 - 1st Run  
30th Oct. - 3rd November, 2017 - 2nd Run

Course Outline:

- Fundamentals of computer programming,
- Methods of solving differential equations,
- Computer method for control system design,
- Computer methods for determination of control stability,
- Computer simulation of a control systems.

AIMS: At the end of this course the participants should be able to:

- Use computer for the design of a control system.
- Use computer for simulation of a control system.
- Use computer to select an appropriate setting for a controller.

FOR WHOM: Engineers, Production managers, Scientists and Technologists.

Course Fee: N100,000.00 per participant

Course No: PP 19:

LPG OPERATIONS & MARKETING

Duration: 19th -23rd June, 2017

Who Should Attend?

Oil Companies employees working in LPG Plants, LPG distribution and marketing. Stock management Officers working in government ministries and regulatory agencies inter . . .

Subjects Covered Include:

LPG production  
LPG properties and applications  
LPG supply chain and regulations  
Construction standards for LPG facilities  
LPG tank farm operations and transfers  
LPG stocks control  
LPG bulk transfers  
LPG transportation  
LPG measurements and stocks control  
LPG cylinder design and inspections  
LPG cylinder filling operations and controls  
LPG safety at home

LPG emergency preparedness and response  
Maintenance and inspections  
Visit to an LPG Plant

Course Fee: N120, 000 per participant

Course No.: PP 20:

LPG INSTALLERS

Duration: 19th - 23rd June, 2017

Who Should Attend?

LPG equipment installation technicians

Subjects Covered Include:

LPG theory  
LPG cylinder and its fittings  
Piping and fittings for LPG  
LPG Regulator  
Sizing of LPG pipes  
Ventilation

Leak Testing, purging  
Domestic appliances  
General Safety with LPG  
LPG Manifolds

Course Fee: N100, 000 per participant

COURSE NO. NGT 1

INTRODUCTION TO NATURAL GAS TECHNOLOGY

Duration: 6th - 10th March, 2017 - 1st Run  
5th - 9th June, 2017 - 2nd Run  
9th - 13th October, 2017 - 3rd Run

Course Objective:

At the end of the Course, the course delegates should be able to understand the basic Concepts and applicable Sciences and Mathematics of Technology, to know:

- 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 Criteria and Market and Customers demands.

Course Outline

- Fundamentals of Natural Gas Technology
- Natural Gas Chemistry and Physics

- Natural Characterisation
- Natural Gas Composition
- Hydrocarbon fluids Mechanics
- Types of Natural Gas
- Natural Gas Reservoirs / Classification
- Elements of Natural Transmission
- Natural Gas Processing
- Elements of Gas Metering

For Whom Craftsmen, Technician, Technologists, Engineers, Marketing, Public Affairs and Finance / Accounts Personnel.

Course Fee: N100, 000 per participant

COURSE NO. NGT 2  
NATURAL GAS PRODUCTION TECHNOLOGY

Duration: 3rd - 7th April, 2017 - 1st Run  
17th - 21st August, 2017 - 2nd Run

Course Objective

At the conclusion of the programme the delegates will be able to 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 Completion, Gas Well Tests and Test Procedures.

Course Outline

- Natural Gas Exploration Technology
- Natural Gas Drilling Engineering Technology
- Natural Gas Well Completion 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.

For Whom

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

Course Fee: N100, 000 per participant

COURSE NO. NGT 3  
BASIC NATURAL GAS PROCESSING TECHNOLOGY

Duration: 21st - 25th August, 2017

Course Objective

At the end of this learning programme, the delegates should be able to know the:

- Source of Gas and Types
- Mechanics of Natural Processing Science and Technology
- Justification for Gas Processing and Science of Impurities
- Technical Problems associated with Gas Processing
- Principles of Reservoir Hydrocarbon fluids Separation
- Unit Operation of the Separator Systems
- Natural Gas Dehydration Technology/Elements of Gas Thermodynamics
- Process Variables and Control
- Gas Scrubbing / Straining
- Rotating Machines application in Gas Processing

Course Outline:

- 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

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

Course Fee: N120, 000 per participant

COURSE NO. NGT 4  
NATURAL GAS PROCESSING AND CONDITIONING TECHNOLOGY.

Duration: 8th - 12th May, 2017

Course Objective

At the end of the learning programmes, the delegates should be able to know

Course Outline:

- 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.

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

Course Fee: N120,000 per participant

COURSE NO. NGT 5  
APPLIED NATURAL GAS TECHNOLOGY

Duration: 13th - 17th March, 2017 - 1st Run  
9th - 13th October, 2017 - 2nd Run

Course Objective At the end of the learning programmes, the delegates should be able to know

Course Outline:

- Applied Natural Gas Systems Thermodynamics
- Computational Modelling of Systems Energy Charges in Natural Gas Technology
- Process Control and Instrumentation in Natural Gas Technology
- Flow Modelling in Natural Gas Technology
- Desiccant Dehydration Technology
- Rate of Changed Processing Time Evaluation
- Applied Heat Transfer in Gas processing
- Systems Integration and Management

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

Course Fee: N180,000 per participant

COURSE NO. NGT 6  
NATURAL GAS SYSTEMS OPERATION MANAGEMENT

Duration: 5th - 9th June, 2017

Course Objective At the end of the learning programmes, the delegates should be able to know

Course Outline:

- Natural Gas Systems Definitions

- Natural Gas Operations Definition
- Introductions to Systems Analysis
- Introduction to Operations Technology
- Principles of Plant Technology
- Systems Operations Diagnosis
- Systems Troubleshooting
- Principles of Operations Management
- Management of Personnel in Plant and Hazardous Environment
- Plant Operations Psychology
- Applied Management Science

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

Course Fee: N300,000 per participant

# Industrial Safety & Environmental Technology Department

The department is one of the oldest in the Institute and has continued to provide manpower training in all fields relevant to the exploration, production and processing of oil and gas.

Trendy and novel programmes such as Environmental Engineering and Industrial Safety, first of its kind in the country and exclusively tailored to the oil and gas operation, characterize the contribution of the department. Employing a vast range of functional infrastructure in terms of laboratories and workshops equipped reasonably to meet the complex and challenging technology demand of the oil and gas industry.

The department provides short/booster courses in emerging skills relevant to Environmental and Safety Operations in the oil and gas industry with human capital capacity for delivering of its quality services stand quite enviable.

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## COURSE NO. S 1 FIRE PREVENTION AND CONTROL TECHNIQUES IN THE PETROLEUM INDUSTRY

Duration: 6th - 10th February, 2017 - 1st Run  
22nd - 26th May, 2017 - 2nd Run  
23rd - 27th October, 2017 - 3rd Run

### Course Objective:

- At the end of the course participants will be able to
- Identify fire hazards in their operations and prescribe preventive measures.
- Classify their work environment into fire zones
- Attack and extinguish any fire outbreak

### Course Outline:

- 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
- Fire fighting equipment; installations and techniques
- Emergency/evacuation procedures
- Evaluation of fire risk.

For Whom: Safety Personnel, Fire Officers; Loss Control,

Managers and Supervisors, Security Officers/Supervisors in various sections of the Petroleum Industry.  
Course Fee: N80,000.00 per participant.

## COURSE NO. S 2 CHEMICAL WASTE - HANDLING AND MANAGEMENT

Duration: 20th - 24th February, 2017 - 1st Run  
14th - 18th August, 2017 - 2nd Run

COURSE OBJECTIVES: To acquaint participant with new and modern techniques in the handling and management of Chemical Waste in the Petroleum and Allied Industries.

### COURSE CONTENTS:

- 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

FOR WHOM: Laboratory Technicians and Technologists, Oil Field Workers, Chemical Analyst, Supervisors, Field Officer, Safety and Health Officers and Managers.

COURSE FEES: N80,000 per participant

COURSE NO. S 3  
FIRST AID TREATMENT/ACCIDENT INVESTIGATION AND REPORTING

Duration: 3rd - 7th April, 2017 - 1st Run  
13th - 17th November, 2017 - 2nd Run

Course Objective:

To expose participants to practical Emergency procedures. Various methods of accident Investigation and reporting will be dealt with

Course Outline:

- 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
- Methods of accident investigations and Reporting.

For Whom: All Industrial Workers Both Management and other staff.

Course Fee: N80,000.00 per participant.

COURSE NO. S 4  
POLLUTION PREVENTION AND CONTROL

Duration: 6th - 10th March, 2017 - 1st Run  
12th - 16th June, 2017 - 2nd Run  
23rd - 27th October, 2017 - 3rd Run

Course Objective:

To acquaint participants with the knowledge of environmental protection. Pollution Control and prevention, environmental impact of pollution.

Course Outline:

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.

For Whom: Chemical, Production, Petroleum, Mechanical Engineers, Field Production Supervisors, Technicians, Science Laboratory Technologists, Para-Medical Staff, FEPA Staff of Water Works.

Course Fee: N80,000.00 per participant

COURSE NO. S 5  
OIL AND DRILLING WASTE - HANDLING AND MANAGEMENT

Duration: 3rd - 7th April, 2017 - 1st Run  
14th - 18th August, 2017 - 2nd Run  
13th - 17th November, 2017 - 3rd Run

COURSE OBJECTIVES: To equip participants with modern techniques for the safe handling and disposal of oil and drilling waste in an environmentally friendly manner.

COURSE CONTENTS:

- Basic Chemistry of Crude Oil
- Drilling Fluids
- Composition/formation of drilling waste
- Toxicity of oil drilling waste
- Waste Management Techniques
- Waste disposal methods

FOR WHOM: Waste Management Personnel, HSE Personnel, CLO's and Drilling Rig Personnel.

COURSE FEES: N80,000 per participant

COURSE NO: S 6  
SAFETY/HSE TRAINING SKILLS

Duration: 5th - 9th June, 2017 - 1st Run  
16th - 20th October, 2017 - 2nd Run

Course Objectives:

To equip participants with the modern skills for incident prevention.

Course Outline:

- 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

For Whom: Safety Professionals, Environmentalists, Lab Personnel, Field Personnel, Loss Control Supervisors/Managers  
Course Fee: N100,000.00 per participant.

COURSE NO: S7

WASTE MANAGEMENT

Duration: 20th - 24th February, 2017 - 1st Run  
7th - 11th August, 2017 - 2nd Run

Course Objectives:

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 Outline:

- 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.

For Whom: Environmental Scientists, FEPA Staff, Local Government Council Sanitary Officers, Health Staff, Safety Officers, Engineers.

Course Fee: N80,000.00 per participant.

COURSE NO: S8

TOXICITY OF ENVIRONMENTAL POLLUTANTS

Duration: 27th - 31st March, 2017 - 1st Run  
18th - 22nd September, 2017 - 2nd Run

Course Objectives:

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 Outline:

- Sources and types of pollutants - Biodegradable and non-biodegradable.
- Distribution, availability and measurement of pollutants in the environment.

For Whom: 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.

Course Fee: N80,000.00 per participant.

COURSE NO: S9

DEFENSIVE DRIVING SKILLS FOR DRIVERS

Duration: 20th - 24th February, 2017 - 1st Run  
21st - 25th September, 2017 - 2nd Run

Course Objectives:

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 Outline:

- 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

For Whom: Drivers

Course Fee: N80,000.00 per participant.

Course No.: S 10: DRIVERS CERTIFICATION

Duration: 15th - 19th May, 2017 - 1st Run  
18th - 22nd Sept., 2017 - 2nd Run

Who Should Attend?

Petroleum trucks drivers who are seeking to be certified as professional petroleum dri . . .

Subjects Covered Include:

- Product knowledge
- Traffic law and Highway code
- Personal protective equipment
- Drivers responsibilities & discipline
- Customer service
- Cots control
- Defensive driving
- Drivers fitness to drive
- Drugs and alcohol policy
- Driver fatigue control
- Quality sleep

Loading procedures  
 Offloading procedures  
 The vehicle  
 Checks  
 Maintenance  
 Vehicle stability  
 In cabin familiarization  
 Tyre safety controls  
 The route  
 Route surveys  
 Route planning  
 Emergency Preparedness  
 Incidents reporting and investigation  
 Emergency preparedness (vehicle accident, fires, spills hijacks etc)  
 First Aid  
 Fire protection  
 Vehicle ergonomics  
 HIV/Aids  
 Field Visits  
 Oil loading depot  
 Product discharge at customer location  
 Road practical tests  
 Course Fee: N90,000.00 per participant.

Course No.: S 11: (3 Days)  
 INTRODUCTION TO REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS (GIS) FOR ENVIRONMENTAL MANAGEMENT.

Duration: 21st - 23rd August, 2017

Course Objectives:

- 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.

Course Outline:

- 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

For Whom:  
 Environmental Scientist / Engineers, Surveyors, Urban Planners, Decision Makers, e.t.c.

Course Fee: N80,000.00 per participant.

Course No.: S 12: (3 Days)

RADIATION PROTECTION TRAINING

Duration: 3th - 6th April, 2017 - 1st Run  
 11th - 13th September, 2017 - 2nd Run

Course Objectives:

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 Outline:

- Properties of 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.

For Whom:

Radiation Protection Supervisors, Radiation Safety Officers (RSO), Industrial Radiographers, Managing Radioactive Site Contractors, X-ray Welders. e.t.c.

Course Fee: N80,000.00 per participant.

Course No: S 13 (3 days)

RADIOLOGICAL SAFETY/PROTECTION COURSE

Duration: 5th - 7th June, 2017 - 1st Run  
 9th - 11th Oct., 2017 - 2nd Run

This course is intended for ionizing radiation source user for inspections, welders, industrial radiography, maritime, nuclear well logging and radioactive material transporting companies. At the end of the training, the trainees are expected to have knowledge about:

COURSE OUTLINE:

1. Radiation fundamentals
  - (a) Sources of radiation (sealed and unsealed sources)
  - (b) Radiation quantities and unites
  - (c) External and internal exposures

2. Interaction of Radiation with matter
3. Biological Effects of Ionizing Radiation
  - (a) Interaction of radiation with cells and tissue
  - (b) Effects of exposure to ionizing radiation
  - (c) Radiation sickness
  - (d) Stochastic and deterministic effect
4. Principles of Radiation Protection
  - (a) Radiation protection standards (Dose limits & ALARA philosophy)
  - (b) External Radiation Protection Principles
  - (c) Internal Radiation Protection Principles
5. Safe Transfer and Transportation of Radioactive materials
  - (a) General requirements for transportation of radioactive material
  - (b) Safety Procedure involved
6. Radiation Monitoring and Detection
  - (a) Selection of appropriate instrument
  - (b) Instrument Operation
  - (c) Monitoring for contamination
  - (d) Personnel Monitoring and Safety
  - (e) Individual Dose Limits
  - (f) Workplace Monitoring
  - (g) Appropriate Safety and Warning Signs in controlled and Supervised areas
  - (h) Ensuring good housekeeping
7. Practical use of Radiation monitoring instruments for personnel Safety
8. Local Rules and Risk Assessment
9. Emergency and Contingency Planning
  - (a) Case studies of some radiation incidents/accidents
  - (b) Utilizing Contingency Planning and Preparation
  - (c) Assessing Counter measures, recovery and reassurance monitoring
  - (d) Safety Culture and communication in normal and accident scenarios.

Course fee: N100,000

Course duration: 3 days.

Course No: S 14

NATURALLY OCCURRING RADIOACTIVE MATERIALS (NORM/TENORM) SOURCES HANDLING AND MANAGEMENT IN OIL AND GAS INDUSTRY

#### Objective Of The Course

To train the participants on the hazards of uncontrolled activities associated with enhanced levels of NORM can contaminate equipments, the environment and pose risk to human health.

#### Target Audience

HSE Supervisors, HSE managers, Radiation Protection officers and others.

Duration: 3rd - 5th July, 2017 - 1st Run  
(3 days) 25th - 27th Sept., 2017 - 2nd Run

#### Course outline

- Origin and sources of NORM
- Dosimetry and units
- Measurement and detection of norm/practical guide/NORM Exposure and Health Hazards of NORM 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.

The training will be interactive, practical experience sharing with case studies. There will be a workshop on NORM/TENORM practical measurement.

Course Fee: N100,000 per participants.

Course No: S 15

RENEWABLE ENERGY AND ENERGY EFFICIENCY (3 days)

Duration: 8th - 10th May, 2017 - 1st Run  
6th - 8th Nov., 2017 - 2nd Run

#### (A) PHOTOVOLTAIC SOLAR POWER GENERATION

##### Course Outline:

- Basic of solar energy
- Photovoltaic System
- Photovoltaic energy conversion performance and output
- Electrics for photovoltaic
- Hand on installation
- Electrical Safety
- Legislations in renewable energy

#### For Whom?

Technicians, Supervisors and others that want to develop carrier in renewable energy.

#### (B) WIND POWER GENERATION

##### Course Outline:

Introduction to Renewable Energy

Wind energy conversion

Wind turbines structures

Electrics for wind systems

Site selection and planning

Resource estimation

Installations and Safety

#### For Whom?

Technicians, Supervisors and others that want to develop carrier in renewable energy.

Course fee: N100,000



# Computer Centre

**A**t the dawn of global computer literacy, the Petroleum Training Institute, the avant-garde training institute in the oil industry in Nigeria, saw the urgent need to develop personnel in the industry to remain at the cutting edge of modern technology. The Centre is engaged in Engineering Services, Management Training, Consultancy Services, Installations and Maintenance of hardware and a host of other Services.

In order to create a conducive learning environment, the training rooms located both in the main campus and Conference center complex has over 100 training computers for participants (individual and corporate) in a networked environment. Internet facilities are equally available in the training rooms. The center operates morning, afternoon and evening sessions for convenience of participants. Admission forms can be obtained at the computer centre. The duration of training ranges from five days to four months and Fees are moderate.

Also, special courses are arranged on request by organizations. These includes Short Courses for Executives, Civil Servants, Accountants, Managers, and other Professionals.

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COURSE NO. CTC 1  
EFFECTIVELY SHARING DATA ON A COMPUTER NETWORK  
USING WINDOWS 2000.

Duration: 20th - 24th February, 2017 - 1st Run  
21st - 25th August, 2017 - 2nd Run

## Course Objective

Introduce participants to the hardware aspects of computer networking. Do hands-on work on data sharing and transfer

between computers; a process that eliminates the rigour of physically moving files from one office to another.

## Course Outline

- Building a Network
- Windows 2000 Professional Installation
- The Role of a Server
- Using the Management Console
- The Control Panel
- The Internet Options Applet
- Sharing a Printer
- Administering Resources

- Group and User management
- Optimization
- Configuring Infrared communications
- Security features: Rights and Permissions
- Troubleshooting

For Whom

Company network administrators, computer users, managers and supervisors.

Course Fee: N80,000 per participant

COURSE NO. CTC 2

CREATING BUSINESS DIAGRAMS WITH MICROSOFT VISIO 2000

Duration: 27th - 31st March, 2017

Course Objectives

At the end of this course the participant should be able to quickly build simple to complex drawings for the purpose of communication in business. The flexibility of this software should allow the user customize standard graphics to suit a particular purpose.

Course Outline

- Block diagrams
- Cause and Effect diagram
- Cross-functional flowcharts
- Audit, Data flow, Mind Mapping, SDL, TQM, and Work Flow diagrams
- Directional and Geographic maps
- Organisation chart
- Office layout
- PERT Chart for project schedule

For Whom

Engineers, Technicians, Business Administrators, Company Secretaries.

Course Fee: N80,000 per participant

COURSE NO. CTC 3

USE OF SPREADSHEET SOFTWARE FOR ADVANCED BUSINESS CALCULATIONS

Duration: 6th - 10th March, 2017 - 1st Run  
30th Oct. - 3rd November, 2017 - 2nd Run

Course Objective

To teach participants with a basic knowledge of spreadsheet programs like Microsoft Excel XP, how to use built-in formulas to solve accounting and engineering problems.

Course Outline

- Calculating asset depreciation and salvage value
- Internal Rate of Return
- Net Present Value (NPV) of an investment
- Interest rates
- One-tailed probability of the Chi-squared distribution
- Standard Deviation from the mean
- Confidence interval for a population mean
- Correlation coefficients
- Degree of diversity
- Forecasting values based on a linear trend using the Least Square Method
- Frequency, MAX, Median, MIN, MODE
- The gamma distribution
- The Pearson product moment correlation coefficient,
- Poisson distribution
- Skewness of a distribution
- Slope of a linear regression
- Variance
- DMAX and DMIN Commands
- Auto Fill series
- Formatting numbers

For Whom

Accountants, engineers, researchers, and managers.

Course Fee: N110,000 per participant

COURSE NO. CTC 4

USE OF RELATIONAL DATABASE MANAGEMENT

Duration: 24th - 28th April, 2017

Course Objective

Imparting to participants the skills required to build relational databases that can handle both the textual and numeric aspects of a body of records relevant to a business.

Course Outline

- Creating tables in design view
- One-to-many relationship
- lookup and hyperlink columns
- Pivot tables
- Find and Replace data

- Forms and sub-forms
- Freezing columns
- Sorting records
- Advanced Filter
- Queries
- Building effective reports
- Analysing performance
- Security: User and Group permissions
- Encrypting and decrypting a database

#### For Whom

Database administrators, Administration and Accounts department staff, technical workers.

Course Fee: N100,000 per participant

COURSE NO. CTC 5  
ENGINEERING PROJECT MANAGEMENT WITH  
MICROSOFT PROJECT 2000.

Duration: 3rd - 7th April, 2017 - 1st Run  
17th - 21st July, 2017 - 2nd Run

#### Course Objective:

Practically show participants how to plan a project, allocate tasks and resources, track progress, and effectively share information about the project from inception to completion.

#### Course Outline

- Introduction to project management
- The project triangle
- Scheduling tasks
- Evaluating and optimizing your plan
- Creating a New project
- The Gantt Chart
- Milestones
- Outlining Subtasks
- Recurring tasks
- Edit a task list
- Link Tasks
- Overlapping and time lag
- Setting start and finish dates
- Constrains and deadlines
- Resources list
- Assigning resources to task
- Costing resources
- Project costing
- Zoom for the big picture
- The Critical path

- Interactive filter
- Sorting tasks and resources
- Task dependency
- Segmenting tasks
- Save baseline and Interim plan
- Track progress
- Identify variances
- Evaluate resources performance
- Manual entry of actual cost
- Comparison to budget
- The Earned Value table
- Managing over-allocated resources
- Printing your project report
- Sharing project information on the web

#### For Whom

Project engineers and technologists, Planning / Accounts department managers and supervisors, public relations department staff.

Course Fee: N150,000 per participant

COURSE NO. CTC 6  
APPLIED ENGINEERING PROJECT MANAGEMENT WITH  
MICROSOFT PROJECT 2000.

Duration: 12th - 16th June, 2017

#### Course Objective:

Practically show participants how to allocate project tasks and resources, do costing, effectively use the critical path technique, and track progress.

#### Course Outline

- Assigning resources to task
- Costing resources
- Project costing
- Zoom for the big picture
- The Critical path
- Interactive filter
- Sorting tasks and resources
- Task dependency
- Segmenting tasks
- Save baseline and Interim plan
- Track progress
- Identify variances

For Whom  
Company Directors, Project engineers, Administration,  
Planning, and Accounts department managers and supervisors.

Course Fee: N150,000 per participant

COURSE NO. CTC 7  
ADVANCED ENGINEERING PROJECT MANAGEMENT FOR  
MANAGERS WITH MICROSOFT PROJECT 2000.

Duration: 21st - 25th August, 2017

Course Objective:  
Practically show participants how to plan a project, allocate  
tasks and resources, track progress, and effectively share  
information about the project from inception to completion.

Course Outline

- Evaluate resources performance
- Critical review of operational constraints
- Personnel performance audit
- Skills audit
- Operational project personnel motivation
- Critical human performance evaluation
- Management of personnel in hazardous environment
- Manual entry of actual cost
- Comparison to budget
- The Earned Value table
- Managing over allocated resources
- Printing your project report
- Sharing project information on the web
- Principles of project quality assurance and control
- Customer satisfaction and conformance to specification  
issues
- Doctrine of timeless, integrity, and project delivery  
management

For Whom  
Company Directors, Project engineers, Researchers.  
Administration, Planning, and Accounts department managers  
and supervisors,

Course Fee: N280,000 per participant

COURSE NO. CTC 8  
INTRODUCTION TO ORACLE: SQL

Duration: 9th - 13th October, 2017

Objective/content -:

At the end of the Course, the attendants should be able to know

- Writing basic SQL select statement
- Restricting and sorting data
- Single row functions
- Displaying data from multiple tables
- Aggregating data using group functions
- Sub-queries
- Manipulating data
- Creating and managing tables
- Creating other database objects
- Controlling access

Course Fee: N100,000

COURSE NO. CTC 9  
INTRODUCTION TO WEBSITE DESIGN

Duration: 15th - 19th May, 2017

Course Outline:

- HTML
- Dream Weaver
- Front Page
- Flash Media to create website

Objective:

At the end of the Course, participants will be able to:

- Plan a Website
- Create a Web Page
- Link Web Pages
- Create a Static Website
- Learn different Methodologies of Website Development

For Whom:  
Individuals & Corporate organisations

Course Fee: N90,000

COURSE NO. CTC 10  
DYNAMIC WEB APPLICATION DEVELOPMENT

Duration: 16th - 20th October, 2017

Course Outline:

- Active Server Page (ASP)
- Structured Query Language (SQL)
- Methods of Connections
- Local Site Hosting

Objective:

At the end of the Course, participants will be able to:

- Appreciate the Limitation of HTML and apply other technologies for expansion.
- Create a Web base database

- Use a Web Form to interact with a database.

For Whom:

Individuals & Corporate organisations

Course Fee: N110,000

# Department of General Studies

Course No: GNS 1  
APPLICATIONS OF THE INTERNET IN MODERN  
TECHNOLOGY

Duration: 20th - 24th February, 2017

Objective: To describe the usefulness of the internet in our society

Course Outline:

- 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

For Whom: For all Organizational Staff

Course Fee: N80,000 per participant

Course No: GNS 2  
COMPUTER APPRECIATION FOR SECRETARIAL STAFF

Duration: 24th - 28th May, 2017

Objective:

- To create computer awareness and to make the Participants to appreciate the importance of computer in our society
- To make the participants to be able to do word processing jobs.

Course Outline:

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

For Whom: The secretaries and other categories of staff  
Who wish to use word processing for their Work

Course Fee: N80,000 per participant

Course No: GNS 3  
DATA PROCESSING AND ANALYSIS (2 Weeks)

Duration: 21st Aug. - 1st September, 2017

Objectives:

- To improve the competence of officers in data Processing and analysis
- To impart knowledge of interpretation of data for Decision making

Course Outline:

- Concept of data
- Data processing in modern organizations.
- Techniques of data processing
- Data gathering
- Data assembling
- Data sorting.
- Data coding
- Data analysis
- Tools of data analysis
- Measures of central tendency
- Measures of dispersion
- Correlation
- Regression .
- Other tools.
- Data analysis software

- Statistical package for the social sciences
- E-views.
- Excel Charts and tables.
- Data Analysis and Decision Making

For Whom: Staff responsible for handling data.

Course Fee: N150,000 per participant

Course No: GNS 4  
EFFECTIVE COMMUNITY RELATIONS

Duration: 15th - 19th May, 2017 - 1st Run  
7th - 11th August, 2017 - 2nd Run  
7th - 11th August, 2017 - 3rd Run

Objective:

- To nurture and develop cordial relationship between Oil Companies and their host Communities
- To assist Oil Companies carry out their mandatory social responsibilities to their host communities.
- To enhance Civic education in host communities with a view to promoting inter-community and inter-ethnic harmony and peaceful co-existence.

Course Outline:

- The Concept Community Relations
- Community relations and community development
- Components of community relations
- Education
- Vocational Training
- Heart Care
- Technology in Community Relations
- Environment Issues in Community relations
- Regulatory (Legal issues in community relations)
- Role of Stakeholders in Community Relations
- Host community
- Oil Companies
- Local Governments
- State Governments
- Federal Government/NDDC
- NGOs
- Pressure Groups

For Whom: Public Relations Officers, Community

Development Officers, Youth Leaders

Course Fee: N80,000per participant

Course No: GNS 5  
EFFECTIVE COMMUNICATION SKILLS FOR MANAGERIAL STAFF

Duration: 19th - 23rd June, 2017 - 1st Run  
30th Oct. - 3rd November, 2017 - 2nd Run

Objective:

- To expose participants to the principle of effective organizational communication
- To make participants realize the role of effective communications in organizational goal achievement

Course Outline:

- What is communication?
- The importance of communication in organizations
- The process of communication
- Elements of the communication process
- The purpose of communication
- Understanding the Organisation as a system
- Verbal and non-verbal communication
- Communication Patterns in the Organisation
- Barriers to effective communication
- Communication and the petroleum industry
- Report Writing

For Whom: For line staff managers in organizations

Course Fee: N80,000 per participant

Course No.: GNS 6  
EFFECTIVE PRESENTATION SKILLS

Duration: 3rd - 7th April, 2017

For whom: Managers/Officers/Supervisors involved in Periodic Briefings

Course Objective: To make participants Adopt Modern Techniques when Presenting Reports to Audiences.

Course Outline:

- The Communication Process

- Communication Skills as a Sender
- Communication Skills as a Receiver
- Writing of Reports
- Modern Presentation of Data

Course Fee: N80,000.00 per participant

Course No: GNS 7  
 TECHNICAL REPORT WRITING

Duration: 13th - 17th March, 2017 - 1st Run  
 9th - 13th October, 2017 - 2nd Run

For Whom: Operational Staff and Maintenance Staff

Course Objective: To ensure that participant Aid Management's Decision Making

Course Outline:

- Importance of Technical Writing Skills
- Effective Technical Report Writing
- How to Write Technical Paper

Course Fee: N80,000.00 per participant

Course No: GNS 8  
 BASICS OF EFFECTIVE COMMUNICATION

Duration: 19th - 23rd June, 2017 - 1st Run  
 16th - 20th October, 2017 - 2nd Run

For whom: Managers, Officers and Supervisors That Lead Various Sections/Departments and Communicate Various Organizational Policies

Course Objective: To make participants realize the critical relevance of communication between them and their Bosses and subordinates and in the Organization at large.

Course Outline:

- Nature and Scope of Communication
- Interpersonal Communication
- Organizational Communication
- Facilitating Organizational Communication
- Tomorrow's Work Place

Course Fee: N80,000.00 per participant



# Others

COURSE NO. SBC 01

OIL FIELD CORROSION MANAGEMENT AND CONTROL

Duration: 27th - 31st March, 2017 - 1st Run  
3rd - 7th July, 2017 - 2nd Run  
23rd - 27th October, 2017 - 3rd Run

Course Objective:

At the end of this course, participants would have a thorough knowledge of corrosion problems control and monitoring methods.

You would learn how to control corrosion through various methods.

This compact programme is scientifically sound and progresses from the basics to specific field techniques of corrosion mitigation with ample 'rules of thumb' and experience factors.

Course Outline:

- Electrochemistry
- Metallurgy Relevant to Corrosion
- Occurrence of Corrosion
- Forms of Corrosion
- Corrosion Control Techniques
- Corrosion Monitoring (TESTING).
- Corrosion of water system (Water Treatment and Steam system).
- Corrosion Economics.
- Safety.

For Whom:

Personnel in the Petroleum and Allied Industries involved with the problems of corrosion and water handling in process operations.

Course Fee: N180,000.00 per participant.

COURSE NO. SBC 02

METERING FUNDAMENTALS/ALLOCATION

Duration: 20th - 24th February, 2017 - 1st Run  
5th - 9th June, 2017 - 2nd Run  
30th Oct. - 3rd November, 2017 - 3rd Run

For Whom: Engineers, Technologist and Technicians in Engineering Organisations & Oil and Gas Industries.

Course Objective: To expose/acquaint participants with the principles of operation and various meters used in measurement of process variables.

Course Outline:

- Hydrocarbon fluid flow characteristics
- Introduction to flow meters
- Turbine Meters
- Positive Displacement Meters
- Types of Pulse Transmitter Counters
- Custody Transfer Operations & Lact System
- Meter Proving and Calibration
- Metering Report Formats
- Production Well Testing
- Preparation and Evaluation of Data Reports
- Evaluation of Data Reports

Course Fee: N120,000.00 per participant

COURSE NO. SBC 03

INDUSTRIAL AND PRODUCTION MANAGEMENT

Duration: 6th - 10th March, 2017 - 1st Run  
30th Oct. - 3rd November, 2017 - 2nd Run

Course Objective: To introduce the participants to the Techniques of Management of Production, Service Workshop,

## Plant Installation and General Engineering Services.

### Course Outline:

- Principles of Management
- Industrial and Production Management
- Maintenance Management
- Work Study
- Plant Layout
- Materials Handling
- Quality Control
- Inventory Management
- Application of Network for Scheduling

For Whom: Factory Managers, Engineers, Technologists and Supervisors in Production, Maintenance, Quality Control, Inventory Control and Engineering Services, Marketing Managers, etc.

Course Fee: N90,000 per participant

## COURSE NO. SBC 04 GENERATOR MAINTENANCE

Duration: 6th - 10th March, 2017 - 1st Run  
30th Oct. - 3rd November, 2017 - 2nd Run

Course Objective: At the end of the course, the participants should be able to:

- Understand the purpose for electrical generators.
- Understand maintenance of generators.

### Course Outline:

- Generator as a Source of electricity
- Principles of Alternating Current Generation
- The importance of Generators and their applications
- Types of Generators.
- Parts of Generators.
- The necessity of Generators maintenance
- Test Instrument, Tools and Equipment
- Types of tests to be performed on generators
- Methods of cooling generators.
- Maintenance of direct current generator
- Maintenance of alternating current generators
- Maintenance of Turbo-generators and internal combustion engine generators.

For Whom: Electrical/Mechanical maintenance Engineers, technologists, technicians and operators whose job involves management, maintenance and operation of electrical generators.

Course Fee: N90,000 per participant

## Course No: SBC 05 HAZARDOUS MATERIALS HANDLING

Duration: 24th - 28th April, 2017 - 1st Run  
23rd - 27th October, 2017 - 2nd Run

For Whom: Those performing The Warehousing And Store Management functions e.g Stress Officers, Warehouse. Supervisors etc.

Course Objective: To Ensure That Participants Have The Requisite Skills To Handle Safely, Goods That Are Dangerous To Both Health and The Environment.

### Course Outline:

- Ware House & Stores Management
- Management Of Surplus, Obsolete And Damaged Stocks
- Social Responsibility
- Health, Safety and Environmental Issues.

Course fee: N90,000 per participant

## COURSE NO. SBC 06 OFFSHORE FIRST AID

Duration 12th - 16th June, 2017 - 1st Run  
6th - 10th November, 2017 - 2nd Run

### Course Objectives

This course is designated to provide personnel employed offshore with adequate understanding of First Aid to be able to administer it safely and effectively provide general support to the offshore medic in serious accidents. It is a statutory requirement that revalidation of this HSE Certificate must be undertaken before the 3 years period expires

Course Structure Aimed at personnel who have previously attended a basic Offshore Safety Induction and Emergency Training (BOSIET) course and practicing offshore.

Prerequisites: None

Target Audience: The course is meant for anyone working offshore who may wish to gain adequate understanding of First Aid.

#### Course Contents

The syllabus focuses on:

- Principles of First Aids
- Resuscitator-CPR-Defibrillators
- Hyperthermia, hypothermia and immersions
- Shock
- Burns
- Poisons
- Fractures
- Illness
- Transporting of casualties
- Casualty stimulation
- Record keeping
- Oxygen and Entonox

Class Size: Minimum 8

Course Fee: N95,000.00 per participant

COURSE NO. SBC 07  
OFFSHORE FIRE/ EMERGENCY RESPONSE

Duration: 3rd - 7th April, 2017

#### Course Objective

This course is designed for delegates in accordance with international standards to upgrade knowledge on offshore Fire/Emergency response and to maintain accepted level of competency. It is valid for 2 years.

#### Course Structure

Delegates are given both theoretical demonstration and practical exercise to an acceptable level of competency.

#### Course Content

- The syllabus focuses on
- Factors and causes of fire
- The practical element of leadership in emergency situation
- Fire and non-fire elements
- Legislation and roles / responsibilities

- Human factor
- Practical fire fighting procedure
- Enclosed space / gas fire

#### Prerequisites

Delegates must have undertaken the offshore Fire/Emergency Response Team Course.

#### Targeted Audience

Aimed at personnel who have completed the offshore Fire / Emergency course and require re-certification.

Class Size: Minimum 8

Course: N160,000.00 per participant

Course No.: SBC 08:  
PETROLEUM DEPOT OPERATIONS

Duration: 13th - 17th March, 2017 - 1st Run  
21st - 25th August, 2017 - 2nd Run

#### Who Should Attend?

Employees wishing to understand various functions within a petroleum depot. Head, Engineering, EHS etc wishing to understand principles governing depot operations.

#### Subjects Covered Include:

Product quality control  
Depot Design Standards  
Fire Prevention and Protection  
Depot Emergency Preparedness Planning  
Tank Farm Operations  
Product Receipts and Transfers  
Marine Receipts  
Product Measurements  
Procedures  
Equipment & Calibration  
Stocks Accounting and Control  
Depot Automation  
Warehouse Controls

Course Fee: N100,000.00

Course No: SBC 09:  
INSTRUMENT, POWER, GROUNDING & ISOLATIONS

Duration: 15th – 19th February, 2017 - 1st Run  
16th – 20th May, 2017 - 2nd Run  
24th – 28th October, 2017 - 3rd Run

Course Outline:

- Power Quality
- Reliable Power Supply
- Power System Design & Installation
- Power Conditioning
- Grounding and Effects of Mouse
- Shield Grounding
- Isolation
- Earth Resistance test for instruments location

For Whom: Craftman, Technician, Technologist, Engineers and any person with science background.

Course Fee: N120,000.00 per participant.

Course No: SBC 10:  
INSTRUMENT CALIBRATION

Duration: 4th – 15th April, 2017 - 1st Run  
15th – 26th August, 2017 - 2nd Run

Course Outline:

- Calibration Overview
- Field Calibration
- Pressure Calibration
- Differential Pressure Calibration
- Level Calibration
- Calibrating in hazardous locations
- Temperature Calibration
- Loop Calibration
- Smart Device Calibration
- Analytical Instrument Calibration (Laboratory Instrument)

For Whom: Craftman, Technician, Technologist, Engineers and any person with science background.

Course Fee: N180,000.00 per participant.

Course No: SBC 11:  
PROGRAMMABLE LOGIC CONTROLLERS (PLC)  
MISTIBUSH

Duration: 6th – 17th June, 2017 - 1st Run  
10th – 21st October, 2017 - 2nd Run

Course Outline:

- MIF Logic Instructions
- Comparison Instructions
- Conversion Instructions
- Counter Instructions
- Data Block Instructions
- Logic Control instructions
- Timer Instructions
- Program Control Instructions
  - ▶ Basic Level Controlling (Tank 1)
  - ▶ Level Controlling Tank (Tank 1 & 2)
  - ▶ Tank Filling Sequence
  - ▶ Simulating Batch Sequencing

For Whom: Craftman, Technician, Technologist, Engineers and any person with science background.

Course Fee: N180,000.00 per participant.

Course No: SBC 12:  
INSTRUMENT MAINTENANCE

Duration: 9th – 13th May, 2017 - 1st Run  
7th – 11th November, 2017 - 2nd Run

Course Outline:

- Brief History of Instrumentation and Control Maintenance
- Fundamental principles of instrument maintenance
- Comprehending maintenance personnel composition
- Pressure and few Instruments, Installation, Maintenance and Repairs
- Instruments Air Requirements
- Temperature Devices Installation Maintenance & Repairs
- Troubleshooting size for primary elements and final control device
- Analytical Instrument (Laboratory Instrument) Maintenance & Repairs

**For Whom:**

Craftman, Technician, Technologist, Engineers and any person with science background.

Course Fee: N150,000.00 per participant.

**Course No: SBC 13:**

**GAS AND FIRE DETECTOR**

Duration: 14th – 18th March, 2017 - 1st Run  
15th – 19th August, 2017 - 2nd Run

**Course Outline:**

- Hazardous Atmosphere
- Basic Air Monitoring (CO<sub>2</sub>, CO, O<sub>2</sub>, H<sub>2</sub>S, CH<sub>4</sub>)
- Hazard Properties Terms
- Flash Point and Ionization potential of various combustible gases
- Gas Detectors Types
- Calibration of Gas Detectors
- Gas Detector Selection
- Gas Detector Safety
- Field Monitoring
- Detection Sequence
- Hazard and Risk Assessment

**For Whom:**

Craftman, Technician, Technologist, Engineers and any person with science background.

Course Fee: N120,000.00 per participant.

# Business Commercial Ventures

Business Commercial Venture comprises:

- ❖ Business Centre
- ❖ Supermarket
- ❖ Canteen

## Business Centre

This unit enables you browsing through the Internet check your mails, shop online at moderate rates. In addition, we provide computer typing, photocopying, spiral binding, lamination etc.

## SUPERMARKET

The ultra modern supermarket located at the locus of the Institute offers a wide range of goods such as:

- Provisions
- Cosmetics
- Foot wears
- Electronics
- Gift items
- Stationeries
- Wears / Accessories
- Fashion etc

## CANTEEN

The canteen offers a wide variety of African and continental dishes including fast food for staff/public at affordable prices.

## RENTALS

We provide shop / premises for rent at moderate rates.

# Conference Centre Complex

The Centre is a modern complex specially designed with training facilities to suit both higher and lower cadre of personnel in the petroleum and allied industries in the following areas:

- a) Seminars
- b) Symposia
- c) Conferences
- d) Workshops

The following facilities are available at the Centre:

- (i) An ultra modern Conference Hall with a sitting capacity of 600 and fully equipped with:
  - a) Central air-conditioning system
  - b) A spacious stage with adjoining dressing rooms and facilities for overhead projector
  - c) A special exhibition gallery
  - d) Full range of Audio-Visual equipment, including close-circuit television facilities

- e) Simultaneous translation equipment. Etc.
- (ii) Well-equipped Restaurant and Bar of International standard capable of sitting 200 guests.
- (iii) Accommodation; well-furnished guest chalets and suites.
- (iv) Large car park / walk way.
- (v) Gift shop/Mini Mart.
- (vi) Laundry Services.
- (vii) A well-organized security network with armed personnel.
- (viii) Sporting facilities includes Lawn Tennis court, Squash court and Table Tennis.
- (ix) 24 hours Power supply with Two 500 KVA Standby Generator as back-up to NEPA.
- (x) Cyber café: E Mail and Web Browse.

Finally, the Conference Centre Complex is located in a serene environment suitable for out door engagements such as wedding receptions, Cultural activities etc at affordable rates.

# Printing Press

The Petroleum Training Institute has a modern Printing Press with the latest Quicksetter 460 Colour Separation Machine. The Printing Press undertakes printing jobs for corporate bodies and individuals, such as Calendars, Separation of Colours jobs from A5 to A2 sizes, Plate Making, Newsletters, Poster and labels, Brochure/ In House Journals, Annual Reports,

Book Binding, Official receipts, Certificates etc.

The Press is a complete printing outfit with the various sub-divisions, such as Pre-Press, Lithographic Machine Print, Print Finishing and Computer Sections. Every stage of our job is important to us, indeed, we print with a flourish.

## PREPRESS SECTION

The pre-press is equipped with new modern facilities that will enhance the quality of jobs. The facilities include;

- Quick setter colour separation machine A2 size.
- Linoscan High resolution scanning A3 size.
- Colour proofing Machine of same dimension.
- Lithographic section: This section handles all aspect of reproduction and plate making.
- Machine section: With our kord 64 and Kors 72 Heidelberg offset printing machine and other offset Gestetner printing machine. This section is well

equipped to handle any printing job

Printing Finish section: This section completes the printing process to the specification of the customer.





**PETROLEUM TRAINING INSTITUTE  
P.M.B 20, EFFURUN, DELTA STATE**

**SHORT COURSE NOMINATION FORM**

- (1) NAME OF NOMINEE: \_\_\_\_\_
- (2) COURSE(S) NOMINATED FOR:  
1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_
- (3) NOMINATING COMPANY/ORGANISATION AND ADDRESS  
\_\_\_\_\_  
\_\_\_\_\_
- (4) QUALIFICATIONS:  
A. \_\_\_\_\_  
B. \_\_\_\_\_  
C. \_\_\_\_\_  
D. \_\_\_\_\_
- (5) WORKING EXPERIENCE:  
A. PREVIOUS WORKING EXPERIENCE  
\_\_\_\_\_  
B. PRESENT DUTIES AND RESPONSIBILITIES  
\_\_\_\_\_
- (6) NOMINATING OFFICER \_\_\_\_\_  
POSITION: \_\_\_\_\_  
PHONE: \_\_\_\_\_  
E-MAIL: \_\_\_\_\_
- (7) END OF COURSE CERTIFICATE:  
(A) TO BE HANDED TO NOMINEE YES/NO  
(B) TO BE SENT TO COMPANY/ORGANISATION YES/NO
- (8) FEES ENCLOSED:  
Course Fees N \_\_\_\_\_  
- Course fees N \_\_\_\_\_  
- Accommodation desired N \_\_\_\_\_ Charlet / Suite  
**X** (Cancel as appropriate)

\_\_\_\_\_  
SIGNATURE OF AUTHORIZING OFFICER AND POSITION

PLEASE NOTE THAT FEES MUST ACCOMPANY NOMINATION ON REGISTRATION  
BEFORE COMMENCEMENT OF THE COURSE

*For further inquiries, please contact:* The Chief Co-ordinator, PTI Consultancy Services Limited, P. M. B. 20, Effurun, Delta State.  
Tel: 0802 332 5487, 0805 205 2867 E-mail: [consult@pti.edu.ng](mailto:consult@pti.edu.ng)



## ARE YOU IN THE PRINTING INDUSTRY/BUSINESS?

then your colour separation problems are solved with the installation of a modern gigantic colour separation equipment at the **PETROLEUM TRAINING INSTITUTE (PTI) PRINTING PRESS**, Effurun, Delta State

- You can now scan and separate your jobs up to A2 dimension
- We also have colour proofing machine of the same dimension
- Our press is equally up to date to handle your colour printing jobs
- as well as Lithographic works.

### VISIT THE INSTITUTE TODAY AND BE CONVINCED



Design+Print: PTI Press, Effurun, Delta State

**COLOUR  
SEPARATION**



For Further Details Contact:  
The Chief Coordinator  
Consult Services Unit,  
Petroleum Training Institute,  
Effurun.

Tel: 0802 332 5487  
0805 205 2867

E-mail: [consult@pti.edu.ng](mailto:consult@pti.edu.ng)

**PTI COLOUR SEPARATION MACHINE THE BEST !!!**