



OIL & GAS

TRAINING
COURSE
CATALOG

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Cowrie⁺ ENR Limited
Oil & Gas Services - Consulting. Advisory. Supplies

BASIC PETROLEUM ECONOMICS

OVERVIEW

Engineers are at the front end of the decision making value chain. Oftentimes, decision cycles are long because of unnecessary iterations, or the quality of decisions are sub optimal because project teams are peopled by professionals who have poor grasps of the principles of economics.

This one week course helps attendees develop or update their competencies in the fundamentals of oil and gas economics. It is targeted towards engineers with little or no exposure to petroleum economics and other personnel desiring to understand the basis of economics in decision making. It is a hands-on, calculation based training course.

TARGET PARTICIPANTS

Engineers, managers, planners, commercial analysts

EXAMPLE MODULES

- Cash Flow and its derivation
- Depreciation
- Income Tax calculation
- Concept of Time Value of Money
- Net Present Value
- Investment Ratios and Payout
- Rate of Return
- Real and Nominal Economics
- Introduction to Fiscal Systems
- Basic economic modeling

PETROLEUM ECONOMICS, RISK AND UNCERTAINTY ANALYSIS

OVERVIEW

This course is designed for more experienced engineers, managers, corporate planners etc. It builds on the modules of the basic economics class and extends into in-depth understanding of fiscal systems, and risk and uncertainty analysis

TARGET PARTICIPANTS

Managers, engineers, corporate planners, commercial analysts

EXAMPLE MODULES

- Overview of Basic Petroleum Economic Theories
- Fiscal Systems
- Economic Limits
- Government Take
- Comparison of Risk vs. Uncertainty
- Uncertainty Analysis- Sensitivity & Scenario Analysis, Expected Value, Decision Trees
- Portfolio Analysis Optimization - Project Consolidation, Ring Fencing, Incremental Economics
- Principles of Monte Carlo Simulation

CORPORATE PLANNING, DECISION AND UNCERTAINTY ANALYSIS FOR O&G EXECUTIVES

OVERVIEW

What should executives look out for when making strategic or tactical decisions? This course helps middle to senior level personnel managing the O&G enterprise understand or hone their skills in the principles and practices of corporate portfolio planning and decision analysis.

TARGET PARTICIPANTS

Senior executives , middle to senior level managers, corporate planners, commercial analysts

EXAMPLE MODULES

- Overview of Basic Economic Principles
- Fiscal Systems
- Risk and Uncertainty Analysis- Sensitivity & Scenario Analysis, Expected Value, Decision Trees
- Portfolio Analysis and Optimization
- Capital Allocation
- Introduction to Dialogue Decision Process
- Managing Uncertainties in Acquisition & Divestiture

RESERVES RECOGNITION: UNDERSTANDING PRMS PRINCIPLES AND SEC RULES

OVERVIEW

A unique course for professionals responsible for, or aiming to develop skills in, reserves reporting. Participants are exposed to the Petroleum Reserves Management System (PRMS) principles and Securities and Exchange Commission (SEC) rules governing the reporting of oil and gas reserves.

Reserves determine the value of an E&P company. Reporting reserves as accurately as possible to statutory bodies involves a clear understanding of the principles and rules of reporting reserves

TARGET PARTICIPANTS

Reservoir engineers, geologists, reserves managers, corporate reserves engineers, commercial analysts

EXAMPLE MODULES

- PRMS Principles
- Reserves vs. Resources & Prospects Definition
- Reserves Classification and Categorization
- Proved, Probable and Possible Reserves
- Reserves Status
- Contingent Resources
- SEC Reserves Reporting Rules

PRINCIPLES & PRACTICES OF RESERVOIR MANAGEMENT

OVERVIEW

The principle of reservoir management course is taught with greater emphasis on case studies & practical aspects of integrated management of the reservoir. Participants learn the essence of the having synergies amongst surface, sub surface & practical commercial realities in efficiently managing the reservoir. Reservoir management models essential towards optimum field development & field operating plans are highlighted. An interdisciplinary reservoir management approach is entrenched. H&s on reservoir modeling & students work on a mocked depletion plan.

TARGET PARTICIPANTS

Asset managers, reservoir engineers, production engineers

EXAMPLE MODULES

- Overview
- Reservoir management processes
- Case studies of reservoir management benefits
- Reservoir management team
- Data management
- Reservoir description
- Depletion plan development & updating
- Wellbore utilization plan
- Reservoir models
- Reservoir issues
- Implementation plan
- Operating plan
- Reservoir surveillance

UNITIZATION & JOINT DEVELOPMENT OF OIL & GAS RESERVOIRS

OVERVIEW

This course gives an in-depth understanding of the problems & solutions in unit formation, negotiation of participation factors & operating agreements. The role of governmental agencies in consent & oversight will also be discussed.

It is presented in a format that includes both lectures & simulation exercises. This approach allows participants to gain experience with the unitization process & determining the appropriate unit participation factors.

TARGET PARTICIPANTS

Middle to senior level managers, Senior Executives, Lawyers, Geologists, Petroleum & Reservoir Engineers.

EXAMPLE MODULES

- Introduction to Unitization
- Unit Negotiations
- Unit Operating Agreement
- Unit Accounting Procedures
- Government regulation of units - global but with special bias for Nigeria
- Joint Development Areas- Cross asset & cross boundary issues

BASIC DRILLING OPERATIONS

OVERVIEW

This course presents an overview of hydrocarbon well drilling operations from start to finish. At the end of the course participants would have honed their skills in basic drilling operations both onshore & offshore, the sequence of the drilling processes, basic components & functions of a drilling rig, drilling economics, formation & fracture pressures, drilling problems & well control procedures, cementing, directional drilling & basic logging operations.

TARGET PARTICIPANTS

Drilling Engineers, Drilling supervisors, & Technical support personnel

EXAMPLE MODULES

- Well planning overview
- Drilling rig systems, their purpose & use
- Differences between onshore & offshore drilling rigs & drilling practices
- Well objectives-exploration, appraisal, development.
- Evaluating design strategies- geological, engineering (well profile design) & HSE
- Engineering considerations for successful well construction- hole sizes, casing/liner options, cementing option, drilling equipment selection
- Well construction phases- surface, Intermediate, production sections
- Principles of the drilling process, fishing, casing & cementing
- Principles of well control & blowout prevention
- Causes & prevention practices concerning lost circulation, stuck pipe
- Well Completion/Production

NATURAL GAS PROCESSING

OVERVIEW

This course covers the processing of gas from the well head through to the point of sale with focus on its handling & associated liquids. Participants are also exposed to competing technologies that could help in rapid development of gas assets.

TARGET PARTICIPANTS

Production Engineers, Facility Engineers, Operations Engineers & Gas Processing Engineers.

EXAMPLE MODULES

- Natural gas & world energy trends
- The role of gas processing in the natural gas value chain
- Technical engineering principles (common conversions, gas density, phase behavior)
- Gas sweetening
- Gas hydrates & dehydration
- Gas conditioning (dew point control) & NGL extraction
- Stabilization & fractionation concepts & facilities
- Gas processing key equipment & support systems (heat transfer, compression, pipelines & gathering systems, & measurement)
- Specialty processes in gas processing (LNG, nitrogen rejection & helium recovery, sulfur recovery, & acid gas re-injection)
- Use of HYSYS with examples for natural gas processing designs.
- Introduction to Membrane Technology.
- Plant Start ups

PRACTICAL DRILLING SKILLS (PDS) I & II

OVERVIEW

The Practical Drilling Skills course exposes engineers to the very important aspects of drilling operation, what to look out for when drilling a well, & how to make proper decisions that ensures delivery safely, on schedule & within estimated AFE. PDS I & II courses run separately for 5 days each but they can both be delivered over a straight two week period.

TARGET PARTICIPANTS

Drilling Managers, Drilling Engineers, & Drilling supervisors.

EXAMPLE MODULES

PDS I

- Visible & Non-visible Non-Productive Time (NPT): causative factors & its elimination.
- Hole problems (stuck pipe, lost circulation, ballooning)
- Drilling fluid conditioning
- Lost circulation
- Drilling rate
- Interpretation of mud logger gas units
- Determining pore pressure
- On-site hydraulic optimization

PDS II

- Drill bit management
- Selecting proper bit loading for the fastest, cheapest hole
- Cementing
- Mud logging & Gas Unit Curve
- Rheology & drilling fluid properties
- Filter cake quality
- Drilling fluid properties necessary to maximize drilling performance
- Discussion of polymers in drilling fluids
- Solids Control- drilled solids removal.
- Interpreting pressure integrity tests
- Borehole stability
- Operating guidelines

OIL PROCESSING AND TREATMENT

OVERVIEW

Course participants are equipped with skills to recognize and develop solutions for operating problems in oil/water processing facilities. They also learn oil, gas, and water compositions and properties needed for equipment selection and sizing, selection and evaluation of processes and equipment used to meet sales or disposal specifications. More importantly, attendees learn to apply physical and thermodynamic property correlations and principles to the design and evaluation of oil production and processing facilities, and how to perform equipment sizing calculations for major production facility separation equipment.

TARGET PARTICIPANTS

Facilities Engineers, Production Engineers, Technical support personnel.

EXAMPLE MODULES

- Review of Reservoir and oil properties
- Phase envelopes and reservoir fluid classification
- Gas, oil, and water - composition and properties
- Oil gathering systems
- Gas-liquid separation
- Emulsions
- Oil-water separation
- Oil treating
- Desalting
- Oil stabilization and sweetening
- Oil storage and vapor recovery
- Treatment of sand, wax, asphaltenes, and scales
- Pipeline transportation of crude oil
- Pumps
- Overview of produced water treatment
- Water injection systems
- Solution gas handling

EXCEPTIONAL PRESENTATION – CORPORATE STORY TELLING

OVERVIEW

Effective communication is a prerequisite skill in today's corporate world. Great leaders are great communicators. Often times however, stage fright, a lack of understanding of the audience and subject, improper body language and ineffective visuals make communication drudgery. This is where we help!

This course sets out with a baseline presentation by participants on the first day. Participants are thereafter taken through a rigorous, hands-on training on the rudiments of presentation and how to develop a story board. During the course, participants continually make practice presentations applying these new skills; they are instantly able to appreciate the transformation that has taken place in a few days. We also teach them the art of making an elevator pitch.

TARGET PARTICIPANTS

All personnel

EXAMPLE MODULES

- Importance of Effective Communication
- Audience, Outcome and Topic
- Benefit Statement
- Framing
- Evidence
- Story Board
- Objection Handling
- Tips for Speakers