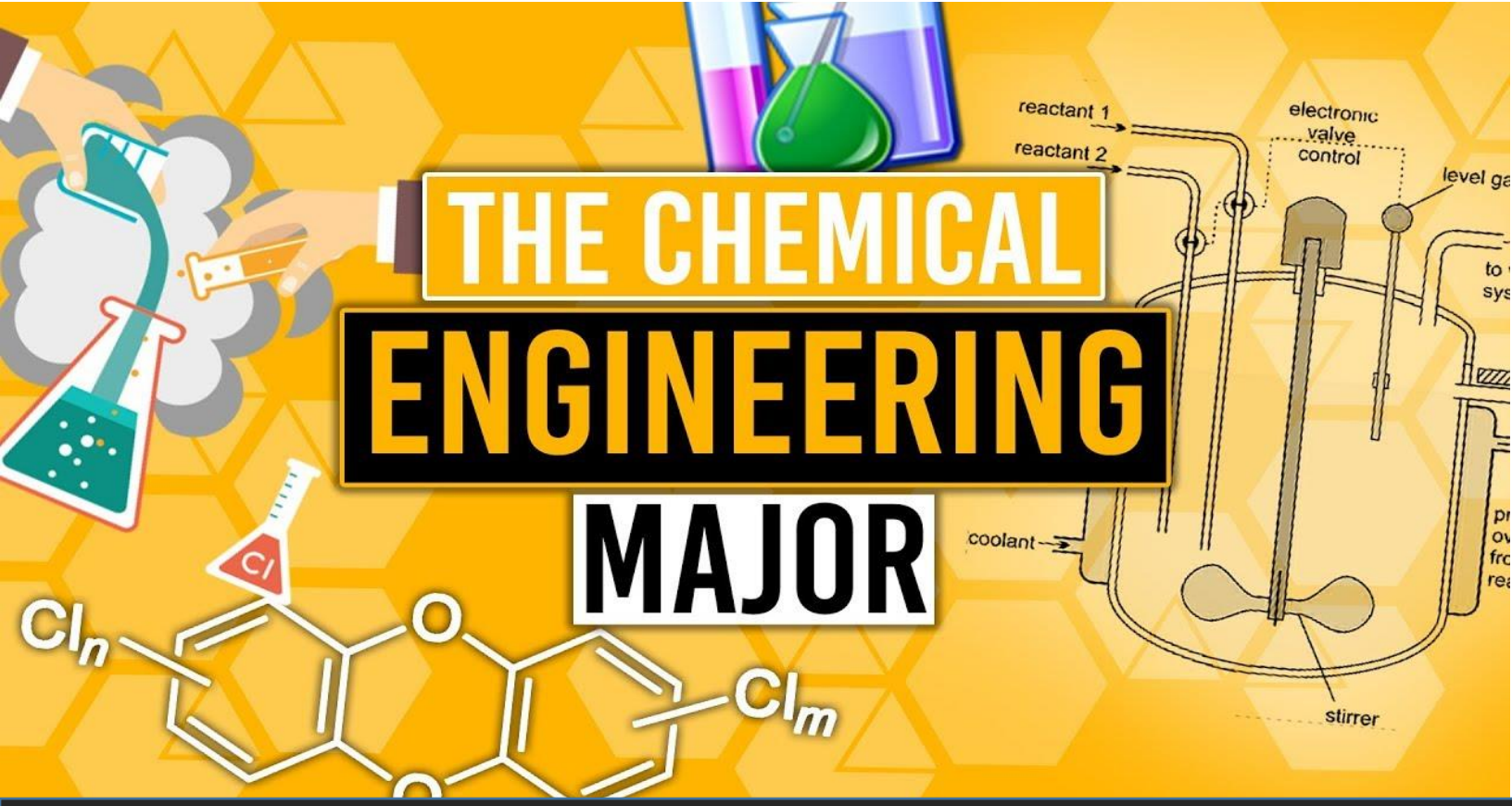

Hydrocarbon Production Operations: The Role of Technology in Operations

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BTS
Training & Consultancy

Hydrocarbon Production Operations: The Role of Technology in Operations

Introduction:

The Hydrocarbon Production Operations training course aims to provide the participants with an integrated view of how oil and gas is produced, focusing on production and related facilities throughout the lifetime of the reservoir. The role of current technology will be presented and in addition, will include an overview of new and emerging technologies used to improve the bottom line, in the current competitive low oil price environment.

An understanding of the wide range of oilfield production handling and treatment equipment that are utilized during exploration and production will be reviewed during this BTS training course and participants will be able to appreciate how fluids behave in the reservoir and how these are extracted processed and refined into finished on-specification marketable products. Reserves calculation and fluids properties, from reservoir through to the gathering network, as well as the necessary knowledge required on how equipment and facilities are operated to maximize production and at the same time minimize costs of this valuable resource, will be presented.

This training course will highlight:

- Up-to-date global statistics of oil & gas, reserves, production, consumption and exports
- Familiarization of the oil and gas supply chain: upstream, mid-stream and downstream operations and related facilities
- Update participants of the various methods and technologies used to explore, drill, produce, treat and transport oil, gas and their products
- Essentials of international oil and gas supply, economics and transportation
- The key economic drivers of the international oil gas value chain.
- Primary logistics – tanker freight costs and chartering
- Supply logistics – major international pipelines, shipping routes, and choke points
- The configuration and structure of different refineries from simple to complex
- The value of crude oil based on product market prices retail and distribution

What are the Goals?

This training course provides a wider management perspective of the global oil and gas business and highlights the success factors in each of its essential components. It follows the natural order of business, starting with exploration, supply and transportation and followed by refining, distribution and trading operations.

Business case studies of crude oil evaluation, price estimation, netback and refinery margin calculations, transportation and storage costs, sales contracts, product quality etc. will be examined. The training course, through the use of visual aids and simulations, will consider several complex operations, such as, drilling, completion, refining, and transportation.

Who Should Attend?

This BTS training course is suitable for personnel needing to gain or improve their knowledge and understanding of crude oil and petroleum products extraction, production and refining, as well as those who want to understand this complex and vast energy industry to comprehend oil sales and causes of price fluctuations.

This training course is suitable to a wide range of professionals but will greatly benefit:

- Oil & gas field personnel
- Operations, maintenance and engineering trainees
- Other support staff who have an interest in increasing their understanding of the oil & gas production operations
- Business Development Managers, Corporate Planning Professionals and Business Analysts switching disciplines who are required to have a better understanding of this stimulating field
- Energy industry journalists and reporters
- Professional personnel such as legal, banking, insurance, finance dealing with oil supply, refining and transportation.

Objectives:

At the end of this training course, you will:

- Gain a broad perspective of the global oil business: Exploration, production, supply, transportation and refining
- Boost your fundamental analysis of netbacks and refinery margin calculations, vessel chartering, pipelines & terminals
- Learn the technical, commercial and environmental aspects of the oil and gas business
- Appreciate the causes and impact of the recent price volatility in crude oil and natural gas markets
- Recognize the cause and effect of unconventional oil and gas on the industry from a financial and environmental perspectives

Course Outline:

Day One: Introduction to the Hydrocarbon Industry

Competency Description: As a professional in the oil and gas industry, you need to gain fundamental technical skills to comprehend oil and gas exploration and production.

Key behaviours

- Appreciate the growing importance of well appraisal
- Understand the scope and structure of the exploration industry
- Understand the requirement for well stimulation
- Be fully aware of project risks and value addition

Topics to be covered

- Overview of the Hydrocarbon Industry
- Global oil & gas statistics
    - Reserves, production, consumption and exports

- Petroleum Economics and Risk Analysis
- Exploration for Oil & Gas
- Seismic Surveys
- Drilling, Testing & Completion
- Well Stimulation and Maintenance

Day Two: Hydrocarbon Recovery Methods

Competency Description: As a professional, you need to be cognizant of logistics of production, storage and transportation

Key behaviours

- Understand the chemistry of oil and gas
- Understand the difference between porosity and permeability
- Appreciate the importance of the surface facilities

Topics to be covered

- Chemical and physical properties of oil & gas
- Rock porosity and permeability; Impact on oil & gas reserve estimation
- Reservoir stimulation

- Reservoir drive mechanisms & technologies for pressure maintenance
- Primary, Secondary Tertiary and quaternary recovery of oil & gas
- Oil & gas field surface facilities
- Case study: Drilling and production problems & challenges

Day Three: Upstream Operations

Competency Description: As an engineer or a technologist, you need to understand the separate processing requirements for producing a marketable product.

Key behaviours

- Appreciate the fundamental reasons for equipment choice for different locations
- Understand the various requirements for different sectors of production
- Be fully aware of how product specifications impact project risks and value addition

Topics to be covered

- Well fluids and surface production operations
- Wellhead types
    - Land
    - Offshore Surface (Jack-up, platform etc.)
    - Subsea

- Production and test manifolds
- Oil & gas separation
    - GOSPs, Slug catchers, Desalters

- Dehydrators & Emulsion treatment
- Separator operation and troubleshooting

Day Four: Downstream Operations

Competency Description: As an industry professional, you need to understand the whole supply chain to producing marketable products and how each segment adds value.

Key behaviours

- Understand processing and purification of natural gas
- Understand the Storage of petroleum and natural gas
- Understand pipeline operations
- Appreciate refinery complexity and its impact on profitability

Topics to be covered

- Gas treatment and processing
- Oil & gas measurement and control
- Oil treatment, storage and transportation
- Pipeline operation and pigging of Crude & Gas pipelines
- Pumps & compressor stations
- Crude oil Refinery operations
- Case study: Refinery Complexity and Netback calculations

Day Five: The Role of Technology in Hydrocarbon Processing

Competency Description: As a professional, you need to be aware of new the Oil & gas technology and its impact on the market.

Key behaviours

- Appreciate the fundamental requirements and differences in new drilling technologies
- Understand LNG business sectors in different regions
- Be fully aware of regional constraints on environmental specifications

Topics to be covered

- Recent advances in drilling Technology
- Extended Reach Drilling (ERD) V's Complex Path Drilling
- LNG - new technologies for natural gas transportation & commoditization
- Corrosion & cathodic protection
- Environmental safety and accident prevention
- Course review and close