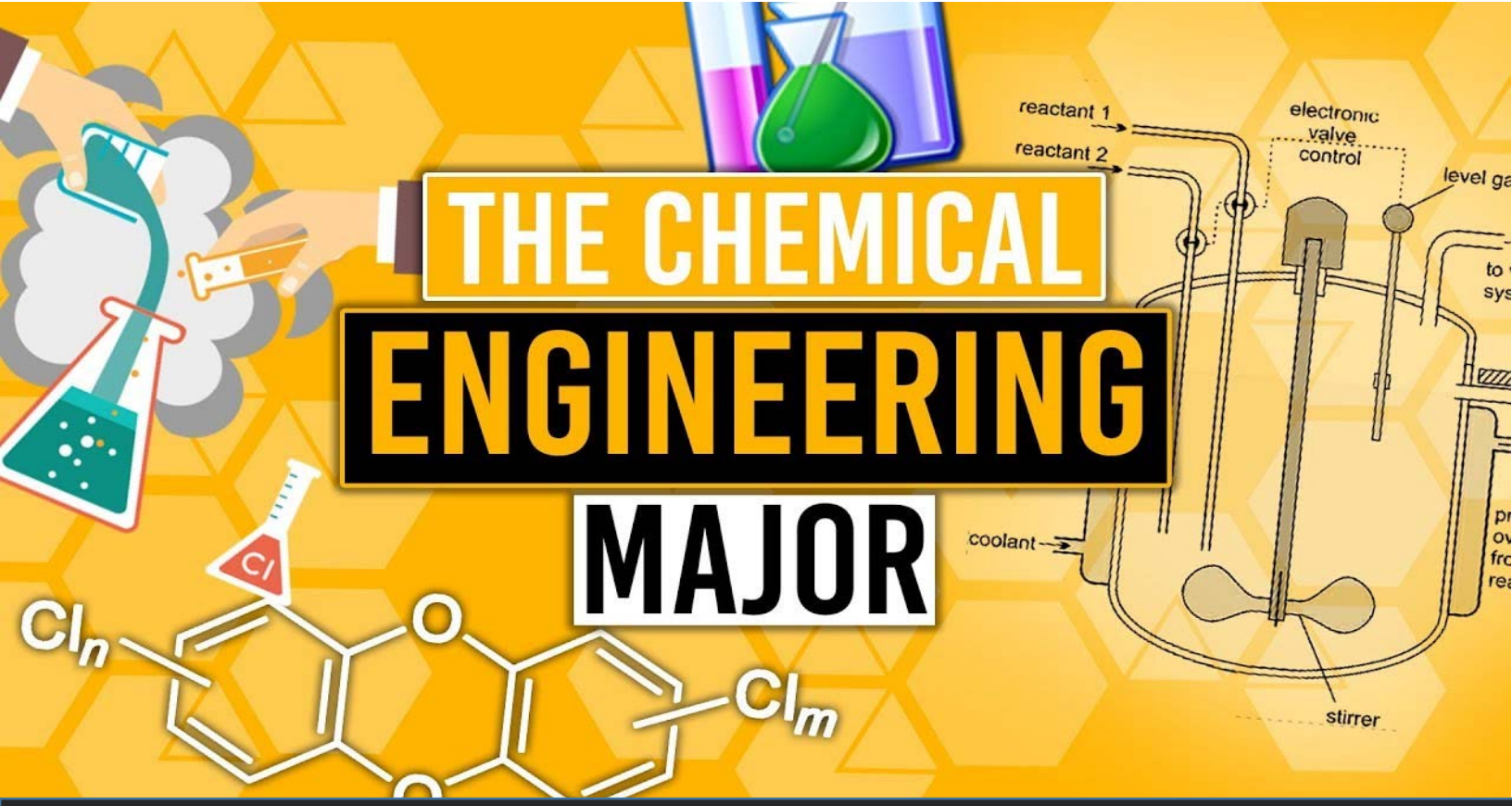

Oil Refinery Cost Management

BTS
Training & Consultancy

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Introduction

In today's modern refining environment, the use of innovative cost management practices that can accurately allocate refined intermediate and product manufacturing costs, may assist refiners to optimize their production, improve their profitability and competitiveness.

Cost management is concerned with the process of planning and controlling the budget of a project or business. Cost management can also be applicable to refinery management systems and it can be a very important part of the refinery production processes. It must be appreciated however that production costs are a synthetic index that can reflect the effectiveness of production planning and scheduling. How to successfully control and manage production costs is a complex set of issues for refineries but it can be used to monitor and control refinery unit performance.

This course will assist in creating cost structures for refinery process units and assist in allocating costs to individual refinery intermediates and finished on-specification products. Important aspect of process plant optimization is related to system energy management and energy consumption reduction. Furthermore, process monitoring that includes advanced controls and new technologies also present opportunities for refinery optimization. Additional opportunities can include Crude unit utilization with opportunity crudes of lower quality and price.

This course it will assist in examining individual process equipment such as atmospheric and vacuum distillation equipment, catalytic and thermal processes, heaters, furnaces and steam boilers, heat exchanger integration, rotating equipment efficiency including pumps and compressors. Oil refinery cost management will provide a comprehensive review of the various aspects of refining cost management, which is the cornerstone for a viable plant profitability and optimization.**This training course will highlight:**

- Lectures, tutorials and group work in all areas of refinery cost management
- Actual Case Studies that illustrate technical solutions with observable results benefits
- Use of basic cost management software tools in excel will be made available to participants
- Transfer of instructor's broad hands-on industrial experience
- Open reflection on real life situations in participants' own refineries

Training Objectives

What are the Goals?

By the end of this training course, participants will be equipped with the knowledge to conduct the following activities in their refineries:

- Determine by various techniques the cost of individual streams in the refinery and individual processes
- Use these costs to calculate the enhancement potential for blending lower cost, on-specification products
- Optimize refinery utility systems such as cooling water, steam and power generation
- Apply energy saving techniques to develop energy saving projects
- Enhance the production planning activities of the refinery via cost management

Target Audience

Who is this Training Course for?

This training course is designed to provide technical and practical approaches for executing petroleum refinery related cost management.

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

- Refining Oil & Gas Field Engineers
- Process plant energy managers/coordinators
- All professionals involved in Production, Planning and Scheduling
- Blending professionals
- Financial Analysts

Training Methods

How will this Training Course be Presented?

Oil Refinery Cost Management is a hands-on, stimulating learning experience. The training course will be highly interactive, with opportunities to advance one's opinions and ideas. Participation is encouraged in a supportive environment.

To ensure the concepts introduced during the training course are understood, they will be reinforced through a mix of learning methods, including lecture style presentations, open discussions, case studies, and short videos. Hands on computer software and simulations will be provided to illustrate the application of costing and cost management. The case studies provided for group work will be re-enforced with practical exercises in excel and there will be ample opportunities for discussion and sharing of experiences.

Organisational Impact

In sending delegates to this training seminar, the organization will gain the following benefits:

- Improved creation of cost structures for refinery process unit production planning and scheduling
- Greater commitment to the process of planning and controlling costs and budgets
- More rapid reaction to changes in the business environment
- Closer alignment of strategic and operational goals
- More cohesive system energy management
- Improved planning and scheduling approach with sustainable plant profitability and optimization

Personal Impact

In attending this training seminar, individual delegates will gain the following benefits:

- Practical ideas for developing and allocating cost structures for refinery process unit
- Enhanced competency in making a more effective contribution to strategic and operational planning
- Up-to-date understanding of main trends in refinery margins
- Greater confidence in dealing with strategic and operational risk
- Familiarization with state-of-the-art spreadsheets for cost management
- Improved ability in appreciating that production costs are a synthetic index that directly affects the bottom line

Daily Agenda

Day One: Overview of Cost Management

- Introduction to cost management
    - Resource planning
    - Cost estimating

    - Cost budgeting
    - Cost control
- Energy and its Effect on Refinery Profitability
- Refinery material & Energy Balance
- Energy Benchmarking
- Fuel, power and steam costing methodology

Day Two: Crude Oil Refining

- Types of refinery
- Key Process Units
- Refinery & Process Utilization
- Global refining situation
- Refining costs
- Refining Investment
- Size and complexity
- Location and logistics
- Maintenance costs

Day Three: Refinery Process Unit Operational Costs

- Physical separation: Crude & Vacuum Unit Distillation
- Product enhancement:
    - Hydrotreating,
    - Catalytic Reforming
    - Fluid Catalytic Cracking
    - Hydrocracking
    - Bottom of the barrel upgrading
- Process simulations
- Advanced Process Control and its benefits
- Blending for Product Specifications
- Blending to reduce product costs

Day Four: Economic Evaluation and Cost Management

- Cost Estimation
- Refinery Complexity and Netback
- The gross refining margin
- The net refining margin
- Factors that influence margins
- Margins according to region
- Refinery Utility System
- Steam and Power System Optimization

- Energy Efficiency; the Effect of Energy on Refinery Profitability
- Quantification of fuel loss, oil accounting

Day Five: Process Heat Integration & Equipment Efficiency; Effective Energy Management

- Process Heat Integration
- How heat integration works?
- Introduction to Pinch Technology
- Heat availability Curves and Energy Targeting
- Equipment Efficiency; Effective Energy Management
    - Fired heaters
    - Rotating equipment
    - Heat Exchangers
- Energy Focused Organisation
- Course review and close