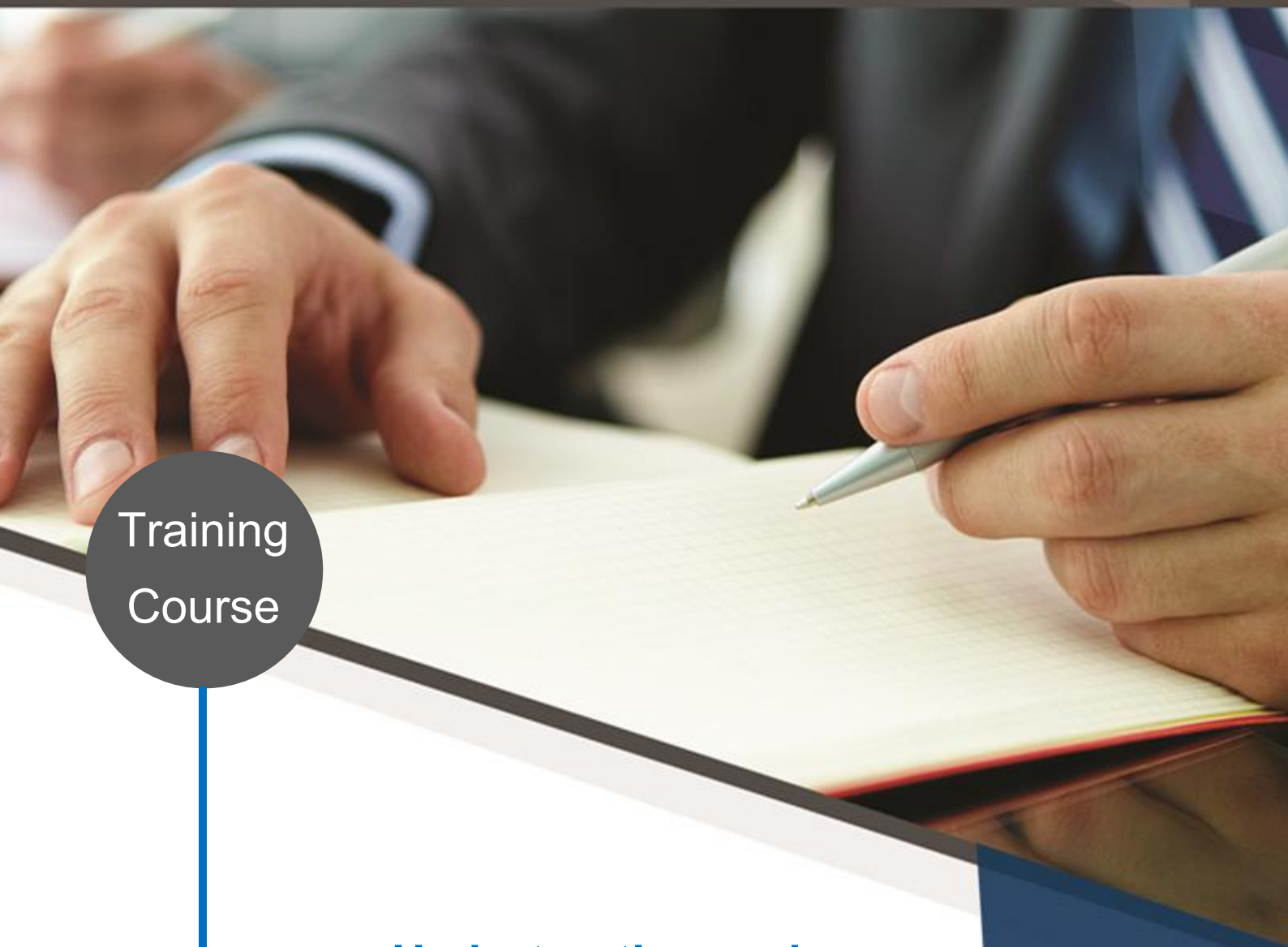
Skills International for Training & Consulting



Training Course

Hydrotreating and Hydrocracking Technology

Skills International for Training & Consulting

سكلز الدولية للتدريب والإستشارات

Course Plan

Introduction

This intensive course provides a comprehensive understanding of hydrotreating and hydrocracking processes, which are vital in modern refining operations for producing clean fuels and high-value products. Participants will explore process chemistry, catalyst technologies, reactor design, operating parameters, and optimization strategies. The course blends theoretical insights with real-world refinery case studies to enhance operational performance, reliability, and profitability.

Course Objectives:

- ✓ Understand the fundamental principles of hydrotreating and hydrocracking processes.
- ✓ Identify key reactions, catalysts, and process parameters.
- ✓ Analyze feedstock characteristics and their impact on process performance.
- ✓ Optimize operating conditions to maximize yield and product quality.
- ✓ Recognize and troubleshoot common process and catalyst issues.
- ✓ Apply best practices for catalyst handling, regeneration, and safety.
- ✓ Integrate hydrotreating and hydrocracking units within the refinery scheme for improved economics.

Who Should Attend?

- Process Engineers and Refinery Engineers
- Operations and Production Supervisors
- Technical and Process Managers
- Catalyst and Technology Specialists
- Chemical Engineers involved in refining and upgrading processes
- Maintenance and Reliability Engineers
- R&D professionals in refining technologies

Training Methods:

- ✓ Online Video material.
- ✓ Presentation.
- ✓ Live Interactive sessions.
- ✓ Course presenter will make extensive use of all tools that will be needed for the virtual environment.
- ✓ Questions & Answers

Course Outline:

Day One

- Introduction to Refining and Conversion Processes
- Overview of Hydrotreating and Hydrocracking
- Feedstock Properties and Contaminants
- Chemistry of Hydrotreating Reactions
- Chemistry of Hydrocracking Reactions

Day Two

- Catalyst Types and Functions
- Catalyst Deactivation Mechanisms
- Catalyst Regeneration and Replacement
- Reactor Design and Configuration
- Process Flow Schemes and Integration

Day Three

- Operating Conditions and Parameters Optimization
- Hydrogen Management and Supply Systems
- Reactor Temperature and Pressure Control
- Heat Exchange and Energy Integration
- Product Distribution and Yield Optimization

Day Four

- Catalyst Loading and Unloading Procedures
- Start-up and Shutdown Procedures
- Process Troubleshooting and Problem Solving
- Fouling and Corrosion Control Strategies
- Process Simulation and Modeling

Day Five

- Environmental and Safety Considerations
- Advances in Catalyst Technologies
- Case Studies from Refinery Operations
- Economic Evaluation and Process Optimization
- Future Trends in Hydrotreating and Hydrocracking Technologies

Training Details

Course Duration	5 Days
Pre-Schedule	14 – 18 Dec 2025
Venue	Dubai – The H Hotel
Training Fees Per Person	KWD 1250 (One Thousand Two Hundred Fifty)
Course Fees Include	✓ Tuition documentation ✓ Curriculum and Training Handout ✓ Five star Lunch ✓ Completion Certificates ✓ Lunch Included