

# Hydrocracking and Hydrotreating Process Technology

## Course

### Venue Information

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**Venue:** London UK

**Place:**

**Start Date:** 2025-09-08

**End Date:** 2025-09-12

### Course Details

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**Net Fee:** £4750.00

**Duration:** 1 Week

**Category ID:** OAGTC

**Course Code:** OAGTC-20

### Syllabus

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## Course Syllabus

### Introduction

This training course is to provide an in-depth, yet practical review of both hydrotreating and hydrocracking technologies for the refining of petroleum. The course will cover topics ranging from the chemistry of hydrotreating and hydrocracking to a discussion of the design of commercial processes and reactors. The program will also address fcc feed pretreatment, diesel and jet fuel production, naphtha hydrotreating, and hydrogen production and purification.

### The Outlines :

#### Day One

- Overview of hydrotreating processes, feeds and configurations

## **Chemistry And Principles Of Hydroprocessing**

- Hydrotreating reactions and process principles
- Chemistry and kinetics of sulfur removal
- Chemistry of nitrogen and oxygen removal
- Hydrotreating catalysts
- Olefin and aromatics saturation
- Coke formation and catalyst deactivation
- Mild hydrocracking
- Resid chemistry

## **Day Two**

### **Naphtha Pretreating**

- Process variables and feedstock effects
- Commercial flow schemes
- Effects on reformer operation

### **Feed And Operating Variable Effects**

- Feed properties
- Operating variable effects
- HDS as FCC pretreatment
- Hydrotreating requirements and process economics

## **Day Three**

### **Diesel And Jet Fuel Production**

- Trends in demand/quality
- Effect of feed/process on yields/quality
- Cut point effects
- Cetane improvers, cloud/pour point improvers
- Commercial considerations in hydroprocessing
- Catalyst presulfiding
- Catalyst deactivation and regeneration
- Process design/mechanical design features

## **Day Four**

### **Commercial Hydrocracking**

- Hydrocracking feedstocks
- Pretreatment considerations
- Review of hydrocracking reactions/heats of reaction
- Hydrocracking process configurations

## **Day Five**

### **Hydroprocessing Mechanical Considerations And Troubleshooting**

- Design principles
- Common problem areas
- Safety issues

### **Hydrogen Production**

- Steam reforming for hydrogen production
- Hydrogen purification options