

COURSE OVERVIEW PE0812
Hydrocracking Process Technology

Course Title

Hydrocracking Process Technology

Course Date/Venue

Session 1: February 23-27, 2025/Boardroom
 1, Elite Byblos Hotel Al Barsha,
 Sheikh Zayed Road, Dubai, UAE

Session 2: August 25-29, 2025/Fujairah
 Meeting Room, Grand Millennium Al
 Wahda Hotel, Abu Dhabi, UAE



Course Reference

PE0812



Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.



This course is designed to provide participants with a detailed and up-to-date overview of hydrocracker process unit technology. It covers the hydrotreatment process, petroleum refining and products specifications; the hydrocracking process configuration; the chemical mechanism of HC cracking and hydrocracking; the hydrocracking and de-alkylation; the fluidized catalytic cracking, and the hydro desulfurization and catalytic reforming.



During this highly interactive course, participants will learn the feed, process variables and pre-treatment considerations; the HC chemical reactor section design and heat of reaction; the hydrocracking catalyst and process variables; the proper HC startup and shutdown procedures, catalyst deactivation and regeneration; the product separation section; the common problems and emergency issues; and the proper troubleshooting and hydrocracking process.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain an in-depth knowledge on hydrocracker process unit technology
- Recognize hydrotreatment process, petroleum refining and products specifications
- Carryout hydrocracking process configuration and identify the chemical mechanism of HC cracking and hydrocracking
- Differentiate hydrocracking and de-alkylation as well as fluidized catalytic cracking, hydro desulfurization and catalytic reforming
- Identify feed, process variables and discuss pre-treatment considerations
- Explain HC chemical reactor section design and heat of reaction
- Describe hydrocracking catalyst and process variables
- Employ the proper HC startup and shutdown procedures, catalyst deactivation and regeneration
- Recognize product separation section
- Identify the common problems and emergency issues and carryout proper troubleshooting and hydrocracking process in a safely manner

Exclusive Smart Training Kit - H-STK®



Participants of this course will receive the exclusive “Haward Smart Training Kit” (H-STK®). The H-STK® consists of a comprehensive set of technical content which includes **electronic version** of the course materials conveniently saved in a **Tablet PC**.

Who Should Attend

This course provides an overview of all significant aspects and considerations of hydrocracker process unit technology for engineers, shift leaders, senior operation personnel and other technical staff who are involved in the operation of hydrocracking units. Further, the course is also suitable for the staff of refineries research centres, oil companies and engineering firms involved in the different operational aspects of this process.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures
- 20% Practical Workshops & Work Presentations
- 30% Hands-on Practical Exercises & Case Studies
- 20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.


Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -



British Accreditation Council (BAC)

Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

- 

The International Accreditors for Continuing Education and Training (IACET - USA)

Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

Haward Technology’s courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units (CEUs)** in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant’s involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant’s CEU and PDH Transcript of Records upon request.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:



Mr. Mohammad Hamami, is a **Senior Process Engineer** with an extensive practical experience within the **Oil, Gas, Refinery, Petrochemical** and **Power** industries. His experience covers **Clean Fuel** Technology & Standards, **Clean Fuel** Specification, Emission Regulation, **Crude Oil** Production, **Desulphurization**, Synthesis **Gas Production**, **Naphtha** Isomerization, **Diesel Fuel Additives**, **Storage Tanks** Filtration, **Fuel Quality** Inspection, **Process Plant** Troubleshooting & Engineering Problem Solving, **Process Equipment** Operation, **Process Plant** Operation, **Process Plant** Start-up & Commissing, **Process Plant** Optimization, **Oil & Gas Field** Operation, **Oil Movement**, Storage & Troubleshooting, **Petroleum Refinery** Process, **Process Reactor** Operation & Troubleshooting, **LPG Oil & Gas** Operation & Troubleshooting, **Crude Oil & LNG** Storage, **LNG & LPG** Plants Gas Processing, **Refinery Process** Operations Technology, **Liquid Bulk Cargo Handling**, **Gas Conditioning** & Processing Technology, **Distillation Column** Design & Operation and **Gasoline & Diesel Fuel** Technology. Further he is also well-versed in **Refinery** Operational Economics & Profitability, Aromatics Manufacturing Process, **Hydrogen Production** Operation, **Steam Reforming** Technology, **Gas Treating**, **Hydro-treating & Hydro-Cracking**, **Catalyst** Material Handling, Gas Sweetening & Sulfur Recovery, Hydro Carbon Dew Point (HCDP) Control, **Heat Exchangers** & Fired Heaters, **Amine Gas** Sweetening, **Plastic Additives** Selection & Application, **Crude & Vaccum** Process Technology, **Flare & Pressure Relief Systems**, Stock Management & **Tank Dipping** Calculation, **NGL Recovery & Fractionation**, **Refrigerant & NGL** Extraction and **Catalytic Cracking & Reforming**.

During his long professional career, Mr. Mohammad worked as a **Refinery Manager**, **Operations Manager**, **Section Head/Superintendent** and **Process Engineer** for **Process Units**, **Utilities & Oil Movement** in various companies. He has been responsible for a number of **technological-driven world-scale hydrocarbon processing projects** from **beginning to successful start-up**.

Mr. Mohammad has a **Bachelor's** degree in **Chemical Engineering**. He is an **active member** of the **American Institute of Chemical Engineers (AIChE)** and has presented **technical papers** at its **several national meetings**. He has largely participated in the **start-up of seven world-scale process plants** which made him an **International Expert** in **Process Plant Start-Up** and **Oil Movement** and a **Certified Instructor/Trainer**.

Course Fee

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met:

Day 1

0730 – 0800	<i>Registration & Coffee</i>
0800 – 0815	<i>Introduction & Welcome</i>
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to Hydro Treatment Process
0930 – 0945	<i>Break</i>
0945 – 1100	Petroleum Refining & Products Specs
1100 – 1230	Hydrocracking Process Configuration
1230 – 1245	<i>Break</i>
1245 – 1420	Chemical Mechanism of HC Cracking and Hydrocracking
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0900	Hydrocracking and De-alkylation
0900 – 0915	<i>Break</i>
0915 – 1100	Fluidized Catalytic Cracking
1100 – 1230	Hydro Desulfurization
1230 – 1245	<i>Break</i>
1245 – 1420	Catalytic Reforming
1420 – 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0900	Feed and Process Variables
0900 – 0915	<i>Break</i>
0915 – 1100	Pre-Treatment Considerations
1100 – 1230	HC Chemical Reactor Section Design & Heat of Reaction
1230 – 1245	<i>Break</i>
1245 – 1420	Hydrocracking Catalyst and Process Variables
1420 – 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 – 0900	H.C. Start-Up & Shutdown Procedures
0900 – 0915	<i>Break</i>
0915 – 1100	H.C. Start-Up & Shutdown Procedures (cont'd)
1100 – 1230	Catalyst Deactivation & Regeneration
1230 – 1245	<i>Break</i>
1245 – 1420	Product Separation Section (cont'd)
1420 – 1430	Recap
1430	<i>Lunch & End of Day Four</i>

Day 5

0730 – 0900	<i>Common Problems, Troubleshooting & Emergency Issues</i>
0900 – 0915	<i>Break</i>
0915 – 1100	<i>Common Problem, Troubleshooting & Emergency Issues (cont'd)</i>
1100 – 1215	<i>Safety in Hydrocracking</i>
1215 – 1230	<i>Break</i>
1230 – 1300	<i>Safety in Hydrocracking (cont'd)</i>
1300 – 1345	<i>Case Study</i>
1345 – 1400	<i>Course Conclusion</i>
1400 – 1415	POST-TEST
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-



Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org