

COURSE OVERVIEW PE0812 Hydrocracker Process Unit Technology

Course Title

Hydrocracker Process Unit Technology

Course Date/Venue

Session 1: February 18-22, 2024/The Mouna Meeting Room, The H Dubai Hotel, Sheikh Zayed Rd - Trade Centre, Dubai, UAE

Session 2: March 03-07, 2024/Kizkulesi, Crown Plaza Istanbul Asia Hotels & Convention Center, Istanbul, Turkey



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, sample video clips of the instructor’s actual lectures & practical sessions during the course 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: -

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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.

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British Accreditation Council (BAC)

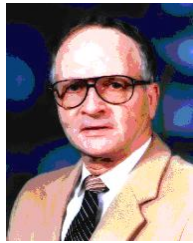
Haward Technology is accredited by the **British Accreditation Council for Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As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

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:



Dr. Fahim Jauhary, PhD, BSc, is a Senior Chemical Engineer & Analytical Chemist with over 40 years of practical experience in power & water utilities, oil & gas and petrochemical industries. His extensive experience covers Water Network Distribution System, Water System Components, Water Treatment Technology, Water Desalination Technology, Water Injection Treatment, Water Treatment Technology, Laboratory Quality Management (ISO 17025), Modern Laboratory Management, Water Analysis, Statistical Analysis, Chemical Analysis, Lab Data Analysis, HAZOP, HAZMAT, HAZCOM, HAZWOPER, MSDS, Confined Space Safety and Gas Testing, Root Cause Analysis, Heat Exchanger, Tank & Tank Farms, Process Plant as well as the Risk Assessment, Corrosion Protection Systems, failure analysis, failure prevention, metallurgy and operation of water desalination plants, oil/gas fields, boilers, oil refineries, gas plants and fertilizer manufacturing. Presently, he is a highly regarded Industrial Consultant for major international companies. With his broad expertise, he is an authority in Corrosion & Metallurgy, Boiler & Steam Management, Condensate Storage Tank, Process Equipment, Process Plant Troubleshooting & Rehabilitation, Process Safety Management (PSM), Industrial Mixing, Refinery Technology, Process Plant Performance & Efficiency, Fertilizer Manufacturing Process Technologies, Metallurgical Failure Analysis & Prevention.

Previously, Dr. Fahim had worked with several international companies as the Executive Manager, Process Engineering Head, Engineering Design Head, Refinery Operations Manager, Production Planning & Control Superintendent and a Technical Adviser. His experience was not only confined to the industry alone. He was also able to largely contribute his expertise and impart his knowledge in the academe as a prestiged professor with the University of Technology in Vienna, Austria. He has engaged himself with researches and lectures in University. He is also a respected inventor and has authored numerous chemical engineering books. He has also largely contributed in the success of several important international conferences and seminars like the Environment Pollution & Control in Vienna, the Industrialization Conference, Energy Conservation in Chemical Plants, International Chemical Engineering Conferences and for the 3rd International Mining Conference.

Dr. Fahim has PhD and Diploma in Chemical Engineering from the University of Technology in Vienna, Austria. Further, he is a Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer by the Institute of Leadership and Management (ILM), a member of the Engineering Association and prominent committees doing industrial training programs, discussions for chemical engineers, industrial project evaluation and lectures worldwide. Moreover, he is a respected inventor and has authored numerous chemical engineering books. He has also largely contributed in the success of several important international conferences and seminars like the Environment Pollution & Control in Vienna, the Industrialization Conference, Energy Conservation in Chemical Plants, International Chemical Engineering Conferences and for the 3rd International Mining Conference.

Course Fee

Dubai	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.
Istanbul	US\$ 6,000 per Delegate + VAT . This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), 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	<i>Catalyst Deactivation & Regeneration</i>
1230 – 1245	<i>Break</i>
1245 – 1420	<i>Product Separation Section (cont'd)</i>
1420 – 1430	<i>Recap</i>
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	<i>POST-TEST</i>
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

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