

COURSE OVERVIEW PE0812-2D Hydrocracking Process Technology

Course Title

Hydrocracking Process Technology

Course Reference

PE0812-2D

Course Duration/Credits

Two days/1.2 CEUs/12 PDHs



Course Date/Venue

Session(s)	Date	Venue
1	May 25-26, 2025	Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
2	July 27-28, 2025	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
3	September 21-22, 2025	Tamra Meeting Room, Al Bandar Rotana Creek, Dubai, UAE
4	November 10-11, 2025	Glasshouse Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

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: -

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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.

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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 **1.2 CEUs** (Continuing Education Units) or **12 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. Mervyn Frampton is a **Senior Process Engineer** with over **30 years** of industrial experience within the **Oil & Gas, Refinery, Petrochemical** and **Utilities** industries. His expertise lies extensively in the areas of **Process Troubleshooting, Distillation Towers, Fundamentals of Distillation** for Engineers, **Distillation Operation and Troubleshooting, Advanced Distillation Troubleshooting, Distillation Technology, Vacuum Distillation, Distillation Column Operation & Control, Oil Movement Storage & Troubleshooting, Process Equipment Design, Piping Systems, Applied Process Engineering Elements, Process Plant Optimization, Revamping & Debottlenecking, Process Plant Troubleshooting & Engineering Problem Solving, Process Plant Monitoring, Catalyst Selection & Production Optimization, Operations Abnormalities & Plant Upset, Process Plant Start-up & Commissioning, Clean Fuel Technology & Standards, Flare, Blowdown & Pressure Relief Systems, Oil & Gas Field Commissioning Techniques, Pressure Vessel Operation, Gas Processing, Chemical Engineering, Process Reactors Start-Up & Shutdown, Gasoline Blending for Refineries, Urea Manufacturing Process Technology, Continuous Catalytic Reformer (CCR), De-Sulfurization Technology, Advanced Operational & Troubleshooting Skills, Principles of Operations Planning, Rotating Equipment Maintenance & Troubleshooting, Hazardous Waste Management & Pollution Prevention, Heat Exchangers & Fired Heaters Operation & Troubleshooting, Energy Conservation Skills, Catalyst Technology, Refinery & Process Industry, Chemical Analysis, Process Plant, Commissioning & Start-Up, Alkylation, Hydrogenation, Dehydrogenation, Isomerization, Hydrocracking & De-Alkylation, Fluidized Catalytic Cracking, Catalytic Hydrodesulphuriser, Kerosene Hydrotreater, Thermal Cracker, Catalytic Reforming, Polymerization, Polyethylene, Polypropylene, Pilot Water Treatment Plant, Gas Cooling, Cooling Water Systems, Effluent Systems, Material Handling Systems, Gasifier, Gasification, Coal Feeder System, Sulphur Extraction Plant, Crude Distillation Unit, Acid Plant Revamp and Crude Pumping. Further, he is also well-versed in HSE Leadership, Project and Programme Management, Project Coordination, Project Cost & Schedule Monitoring, Control & Analysis, Team Building, Relationship Management, Quality Management, Performance Reporting, Project Change Control, Commercial Awareness and Risk Management.**

During his career life, Mr. Frampton held significant positions as the **Site Engineering Manager, Senior Project Manager, Process Engineering Manager, Project Engineering Manager, Construction Manager, Site Manager, Area Manager, Procurement Manager, Factory Manager, Technical Services Manager, Senior Project Engineer, Process Engineer, Project Engineer, Assistant Project Manager, Handover Coordinator and Engineering Coordinator** from various international companies such as the **Fluor Daniel, KBR South Africa, ESKOM, MEGAWATT PARK, CHEMEPIC, PDPS, CAKASA, Worley Parsons, Lurgi South Africa, Sasol, Foster Wheeler, Bosch & Associates, BCG Engineering Contractors, Fina Refinery, Sapref Refinery, Secunda Engine Refinery** just to name a few.

Mr. Frampton has a **Bachelor's degree in Industrial Chemistry** from **The City University in London**. Further, he is a **Certified Instructor/Trainer, a Certified Internal Verifier/Trainer/Assessor** by the **Institute of Leadership & Management (ILM)** and has delivered numerous trainings, courses, workshops, conferences and seminars internationally.

Course Fee

US\$ 2,750 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 – 0900	<i>Introduction to Hydro Treatment Process</i>
0900 – 0930	<i>Petroleum Refining & Products Specs</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Hydrocracking Process Configuration</i>
1030 – 1100	<i>Chemical Mechanism of HC Cracking & Hydrocracking</i>
1100 – 1130	<i>Hydrocracking & De-alkylation</i>
1130 – 1215	<i>Fluidized Catalytic Cracking</i>
1215 – 1230	<i>Break</i>
1230 – 1330	<i>Hydro Desulfurization</i>
1330 – 1420	<i>Catalytic Reforming</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0830	<i>Feed & Process Variables</i>
0830 – 0900	<i>Pre-Treatment Considerations</i>
0900 – 0930	<i>HC Chemical Reactor Section Design & Heat of Reaction</i>
0930 – 0945	<i>Break</i>
0945 – 1030	<i>Hydrocracking Catalyst & Process Variables</i>
1030 – 1100	<i>H.C. Start-Up & Shutdown Procedures</i>
1100 – 1130	<i>Catalyst Deactivation & Regeneration</i>
1130 – 1215	<i>Common Problems, Troubleshooting & Emergency Issues</i>
1215 – 1230	<i>Break</i>
1230 – 1300	<i>Safety in Hydrocracking</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