



## COURSE OVERVIEW PE0814 Hydrocracking Process Technology

### Course Title

Hydrocracking Process Technology

### Course Date/Venue

September 09-13, 2024/Fujairah Meeting Room,  
Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

### Course Reference

PE0814

### 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 complete and up-to-date overview of the hydrocracking and hydrotreating process technology. It covers the hydrocracking and hydrotreating reactions; the feed preparation and hydrocracking process; the hydrocracking catalyst, process variables and hydrocracking yields; the investment and operating costs and modes of hydrocracker operation; the isocracking-hydrocracking for superior fuels and lubes; and the UOP uncracking process for hydrocracking.



The course will also discuss the hydrotreating catalysts; the naphtha and distillate hydrotreating and aromatics reduction; the reactions, process variables and construction and operating costs; the Chevron lummus global RDS/VRDS hydrotreating-transportation fuels from the bottom of the barrel; the selective hydrogenation processes, UOP unionfining technology, UOP RCD unionfining technology and UOP catalytic dewaxing process; and the UOP unisar process for saturation of aromatics including Chevron lummus global ebullated bed bottom-of-the-barrel hydroconversion (LC-finishing) process.

## Course Objectives

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

- Apply and gain a comprehensive knowledge on hydrocracking and hydrotreating process technology
- Discuss the hydrocracking and hydrotreating reactions
- Illustrate feed preparation and hydrocracking process
- Identify hydrocracking catalyst, process variables and hydrocracking yields
- Carryout investment and operating costs and modes of hydrocracker operation
- Recognize isocracking-hydrocracking for superior fuels and lubes
- Apply UOP unicracking process for hydrocracking
- Identify hydrotreating catalysts and apply naphtha and distillate hydrotreating and aromatics reduction
- Determine reactions, process variables and construction and operating costs
- Explain chevron lummus global RDS/VRDS hydrotreating-transportation fuels from the bottom of the barrel
- Carryout selective hydrogenation processes, UOP unionfining technology, UOP RCD unionfining technology and UOP catalytic dewaxing process
- Illustrate UOP unisar process for saturation of aromatics including Chevron lummus global ebullated bed bottom-of-the-barrel hydroconversion (LC-finishing) process

## 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 hydrocracking and hydrotreating process technology for all engineering and operations staff. Further, the course is suitable for maintenance, facility integrity, pipelines/piping, quality, Health, Safety and Environmental personnel who are seeking to improve their knowledge and skills on refinery processes and gain exposure on refinery concepts and technology including the operation, safety and control aspects.

## 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.

## Accommodation

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

### 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: -

-  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.



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.

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. Henry Beer** is a **Senior Process Engineer** with over **35 years** of indepth industrial experience within the **Petrochemical, Oil & Gas** industries specializing in **Hydrocarbon Process Equipment, DOX Unit Operation & Troubleshooting, Polyethylene & Polypropylene Processing, Oil Movement Storage & Troubleshooting, Power Plant Chemistry, Fuel Quality Monitoring System Fundamentals, Liquid Bulk Cargo Handling, Oil Refinery Cost Management, Flare & Blowdown Operation, Pressure Relief Systems Maintenance & Troubleshooting, Refinery SRU, Tail Gas Treating, Sour Water & Amine Recovery Units, Propylene Compressor and Turbine, Clean Fuel Technology & Standards, Principles of Operations Planning, Heat Exchangers & Fired Heaters Operation & Troubleshooting, Plastic Extrusion Technology Operation & Troubleshooting, Chemical Engineering for Non-Chemical Engineers, Process Plant Troubleshooting, Process Plant Optimization Technology, Engineering Problem Solving, Process Plant Performance & Efficiency, Process Plant Start-up & Shutdown, Process Plant Commissioning, Process Plant Turn-around & Shutdown, Pumps & Compressors Troubleshooting, Fired Heaters & Air Coolers Maintenance, Pressure Vessels & Valves Repair, Polymers, Plastics, Polyolefin & Catalysts, Polymerization, Thermal Analysis Techniques, Rheology, Thermoplastics, Thermosets, Coating Systems and Fibre Reinforced Polymer Matrix Composites**. Further, he is also well-versed in **Water Hydraulic Modelling, Efficient Shutdowns, Turnaround & Outages, Pump Selection and Installation, Operation and Maintenance of Pumps, Demand & Supply Management, Catalyst Manufacturing Techniques, Fuel Systems Management, Aviation Fuel, Diesel, Jet Fuel, Petrol and IP Octane, Cetane Control** and related Logistics, Road, Rail and Pipeline Distribution, **Process Design and Optimisation, Boiler Feed Water Preparation, Flocculation Sedimentation, Hot Lime Water Softening Processes, Desalination Processes, Reverse Osmosis, Molecular Sieves, activated Sludge Aerobic/Anaerobic, Sludge Removal and Incineration Process Control, Domestic Sewage Plants Optimisation, Process Cooling Water System, High Pressure and Low Pressure Tank Farm Management, Hydrocarbon and Chemical products and GTL (Gas to Liquids)**.

During his career life, Mr. Beer holds significant key positions such as the **Director, Global Commissioning Manager, Process Engineering Manager, Senior Business Analyst, Process Engineer, Chemical Engineer, Senior Technician, Technical Sales Engineer, Entrepreneur, Financial Consultant, Business Analyst, Business Financial Planner and Independent Financial Planner** to various international companies such as the **Sasol, SASOLChem, TAG Solvents, Virgin Solvent Products, SARS & SAPIA (South African Petroleum Industry Association)** and **RFS Financial Services (Pty) Ltd**.



**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	Registration & Coffee
0800 - 0815	Welcome & Introduction
0815 - 0830	<b>PRE-TEST</b>
0830 - 0930	<b>Introduction to Hydrocracking</b>
0930 - 0945	Break
0945 - 1030	<b>Hydrocracking Reactions</b>
1030 - 1130	<b>Feed Preparation</b>
1130 - 1230	<b>The Hydrocracking Process</b>
1230 - 1245	Break
1245 - 1420	<b>Hydrocracking Catalyst</b>
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day One

**Day 2**

0730 - 0930	<b>Process Variables</b>
0930 - 0945	Break
0945 - 1030	<b>Hydrocracking Yields</b>
1030 - 1130	<b>Investment &amp; Operating Costs</b>
1130 - 1230	<b>Modes of Hydrocracker Operation</b>
1230 - 1245	Break
1245 - 1420	<b>Isocracking-Hydrocracking for Superior Fuels &amp; Lubes</b>
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day Two

**Day 3**

0730 - 0930	<b>UOP Unicracking Process for Hydrocracking</b>
0930 - 0945	Break
0945 - 1030	<b>Hydrotreating Catalyst</b>
1030 - 1130	<b>Naphtha &amp; Distillate Hydrotreating</b>
1130 - 1230	<b>Aromatics Reduction</b>
1230 - 1245	Break
1245 - 1420	<b>Reactions</b>
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day Three

**Day 4**

0730 - 0930	<b>Process Variables</b>
0930 - 0945	Break
0945 - 1030	<b>Construction &amp; Operating Costs</b>
1030 - 1130	<b>Chevron Lummus Global RDS/VRDS Hydrotreating-Transportation Fuels from the Bottom of the Barrel</b>
1130 - 1230	<b>Selective Hydrogenation Processes</b>
1230 - 1245	Break
1245 - 1420	<b>UOP Unionfining Technology</b>
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day Four





**Day 5**

0730 – 0930	<b>UOP RCD Unionfining Process</b>
0930 – 0945	<i>Break</i>
0945 – 1030	<b>UOP Catalytic Dewaxing Process</b>
1030 – 1130	<b>UOP Unisar Process for Saturation of Aromatics</b>
1130 – 1230	<b>Chevron Lummus Global Ebullated Bed Bottom-of-the-Barrel Hydroconversion(LC-Fining) Process</b>
1230 – 1245	<i>Break</i>
1245 – 1345	<b>General Discussion: Question &amp; Answers</b>
1345 – 1400	<b>Course Conclusion</b>
1400 – 1415	<b>POST-TEST</b>
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch &amp; 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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