

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

o CEUs

(30 PDHs)

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 unicracking 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-fining) 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-fining) 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

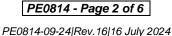
Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.



















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.

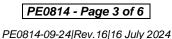
Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation 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 Troubleshooting, Polyethylene Polypropylene Operation & & 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 Startup & 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 wellversed 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).

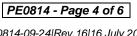
During his career life, Mr. Beer holds significant key positions such as the Director, Global Commissioning Manager, Process Engineering Manager, Senior Business Analyst, Process Engineer, Chemical Engineer, Senior Technician, Technical Sales Engineer, Entrepreneur, Financial Consultant, Business Analyst, 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

| Registration & Coffee |
|-------------------------------|
| Welcome & Introduction |
| PRE-TEST |
| Introduction to Hydrocracking |
| Break |
| Hydrocracking Reactions |
| Feed Preparation |
| The Hydrocracking Process |
| Break |
| Hydrocracking Catalyst |
| Recap |
| Lunch & End of Day One |
| |

Day 2

| Process Variables |
|--|
| Break |
| Hydrocracking Yields |
| Investment & Operating Costs |
| Modes of Hydrocracker Operation |
| Break |
| Isocracking-Hydrocracking for Superior Fuels & Lubes |
| Recap |
| Lunch & End of Day Two |
| |

Day 3

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

Day 4

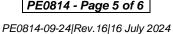
| 0730 - 0930 | Process Variables |
|-------------|---|
| 0930 - 0945 | Break |
| 0945 - 1030 | Construction & Operating Costs |
| 1030 – 1130 | Chevron Lummus Global RDS/VRDS Hydrotreating-Transportation |
| | Fuels from the Bottom of the Barrel |
| 1130 - 1230 | Selective Hydrogenation Processes |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

















Day 5

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

Practical Sessions

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



Course Coordinator

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