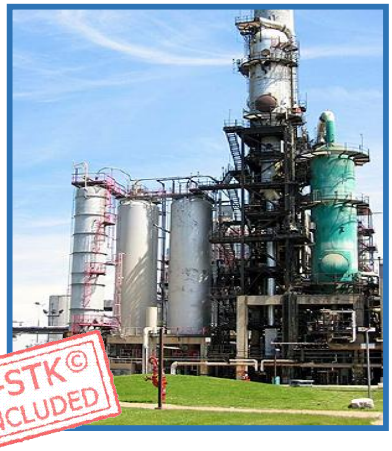
COURSE OVERVIEW PE0800

Fluid Catalytic Cracker & Associated Units Design

Course Title
Fluid Catalytic Cracker & Associated Units Design



Course Date/ Venue
Session 1: June 30-July 04, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
Seesion 2: October 26-30, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
PE800-IH

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

Modern Petroleum Refining Process is an integrated training that covers the latest licensable technologies for the refining of petroleum and the production of environmentally acceptable fuels and petrochemical intermediates. The training consists of six (6) modules, each module is a 5-day course, all together comprises the most comprehensive training in this important area of technology. The following is the list of all the 6 courses (modules):-

Module #1 (PE790): Modern Petroleum Refining Processes: Module # 1: Alkylation, Polymerization and Base Aromatics Production Processes

Module #2 (PE800): Modern Petroleum Refining Processes: Module # 2: Catalytic Cracking and Catalytic Reforming

Module #3 (PE810): Modern Petroleum Refining Processes: MODULE # 3: Dehydrogenation, Hydrogen Production, Hydrocracking & Hydrotreating

Module #4 (PE820): Modern Petroleum Refining Processes: Module # 4: Isomerization & Separation Processes

Module #5 (PE830): Modern Petroleum Refining Processes: Module # 5: Sulfur Compound Extraction & Sweetening

Module #6 (PE840): Modern Petroleum Refining Processes: Module # 6: Visbreaking, Coking, Oxygenates Production, Hydrogen Processing & Gas-to-Liquids Technologies

Each training module is a stand-alone course and does not have any pre-requisites training, i.e. participant in any training module does not need to attend all or other modules.

This module # 2 (course) has been designed to provide information on the key areas of Catalytic Cracking and Catalytic Reforming for the refining of petroleum. The module supplies complete coverage of design, operation, troubleshooting and optimization of fluid catalytic cracking (FCC) facilities. Further, it reveals the latest technologies to help improve profitability and reliability of FCC units.

Course Objectives

Upon the successful completion of the course, participants will be able to gain knowledge on the following topics:-

- **Catalytic Cracking:** covers fluid catalytic cracking technologies for converting vacuum gas oils, coker gas oils and some residual oils, as well as aromatic lube extracts to gasoline and C_3 to C_5 olefins and light cycle oil

- **Catalytic Reforming:** contains information on producing high-octane liquids rich in aromatics from naphtha. By-products include hydrogen, light gas and LPG.

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 program is ideal for personnel involved in refinery process engineering, unit operations, research and development, sales, and refinery technical service. Process engineers from design and construction companies as well as those who provide products and services to the petroleum refining industry should also find the program very useful and informative.

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 book.

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 & Profitablity, 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 Craking & Reforming.**

During his long professional carreer, 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. 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	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Catalytic Cracking*** *KBR Fluid Catalytic Cracking Process (Ntroduction; Feedstocks)*
0930 – 0945	*Break*
0945 – 1045	***Catalytic Cracking (cont'd)*** *KBR Fluid Catalytic Cracking Process (Products; Process Descriptions)*
1045 – 1230	***Catalytic Cracking (cont'd)*** *KBR Fluid Catalytic Cracking Process (Process Variables; Advanced Process Control)*
1230 -1245	*Break*
1245 – 1420	***Catalytic Cracking (cont'd)*** *KBR Fluid Catalytic Cracking Process (Catalyst and Chemical Consumption; Investment and Utilities Cost)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2:

0730 - 0930	***Catalytic Cracking (cont'd)*** *Deep Catalytic Cracking, the New Light Olefin Generator (Basis; Process Description)*
0930 - 0945	*Break*
0945 - 1130	***Catalytic Cracking (cont'd)*** *Deep Catalytic Cracking, the New Light Olefin Generator (Catalyst; Feedstocks)*
1100 - 1230	***Catalytic Cracking (cont'd)*** *Deep Catalytic Cracking, the New Light Olefin Generator (Operating Conditions; DCC Product Yields)*
1230 - 1245	*Break*
1245 - 1420	***Catalytic Cracking (cont'd)*** *Deep Catalytic Cracking, the New Light Olefin Generator (DCC Integration)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3:

0730 - 0930	***Catalytic Cracking (cont'd)*** *UOP Fluid Catalytic Cracking Process (Introduction; Development History; Process Chemistry)*
0930 - 0945	*Break*
0945 - 1130	***Catalytic Cracking (cont'd)*** *UOP Fluid Catalytic Cracking Process (Thermodynamics of Catalytic Cracking; Catalyst History; Process Description)*

1100 - 1230	***Catalytic Cracking (cont'd)*** *UOP Fluid Catalytic Cracking Process (Modern UOP FCC Unit; Feedstock Variability)*
1230 - 1245	*Break*
1245 - 1420	***Catalytic Cracking (cont'd)*** *UOP Fluid Catalytic Cracking Process (Process Costs; Market Situation)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

0730 - 0930	***Catalytic Cracking (cont'd)*** *Stone & Webster – Institut Francais du Petrole Fluid RFCC Process (History; Process Description)*
0930 - 0945	Break
0945 - 1130	***Catalytic Cracking (cont'd)*** *Stone & Webster – Institut Francais du Petrole Fluid RFCC Process (RFCC Feedstocks; RFCC Catalyst)*
1100 - 1230	Break
1230 - 1245	***Catalytic Cracking (cont'd)*** *Stone & Webster – Institut Francais du Petrole Fluid RFCC Process (Two-Stage Regeneration; Mechanical Design Features)*
1245 - 1420	***Catalytic Cracking (cont'd)*** *Stone & Webster – Institut Francais du Petrole Fluid RFCC Process (FCC Revamp to R2R) (Second-Stage-Regeneration Addition)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5:

0730 – 0930	***Catalytic Reforming*** *UOP Platforming Process (Process Evolution; Process Chemistry)*
0930 – 0945	*Break*
0945 – 1100	***Catalytic Reforming (cont'd)*** *UOP Platforming Process (Process Variables; Continuous Platforming Process)*
1100 – 1230	*Break*
1230 – 1245	***Catalytic Reforming (cont'd)*** *UOP Platforming Process (Case Studies; UOP Commercial Experience)*
1245 – 1345	***Catalytic Reforming (cont'd)*** *UOP Platforming Process (RZ-Platforming)*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical highly-interactive course includes the following real-life case studies:-

Course Coordinator

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