

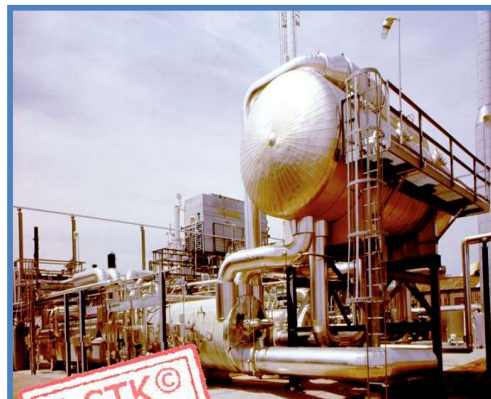
COURSE OVERVIEW PE0801(AR1)
Catalytic Reformer and CCR – Basic

Course Title

Catalytic Reformer and CCR – Basic

Course Date/Venue

Session 1: July 20-24, 2025/Boardroom 1,
 Elite Byblos Hotel Al Barsha,
 Sheikh Zayed Road, Dubai, UAE
 Session 2: December 08-12, 2025/Fujairah
 Meeting Room, Grand Millennium
 Al Wahda Hotel, Abu Dhabi, UAE

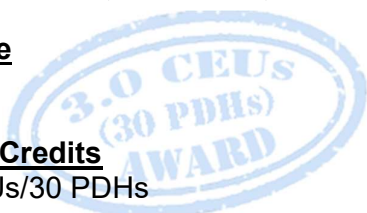


Course Reference

PE0801(AR1)

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 an introduction to the main industrial processes used to produce olefins, aromatics, main polymers, synthesis gas, methanol and ammonia. The participants will also gain a broad understanding of steam cracking.



This course is designed to provide participants with a detailed and up-to-date overview of Catalytic Reformer and CCR – Basic. It covers the recent developments within the field; catalytic reforming including the products, processes, catalytic reforming units and their operations, catalysts, CCR technologies and catalyst regeneration and new technologies; the isomerization including isomerization fundamentals, feedstock and product properties, comparison of process schemes and performance, parameters of isomerization units and its proper operation and troubleshooting; the hydrotreatment including aims of various treatments, molecular structures, chemical reactions, role and action of catalyst, operating conditions, process scheme and operating variables and dealing with low sulfur content; the sweetening of light cuts and sulfur recovery and their processes, amine absorption, claus process and tail gas treatment.



Course Objectives

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

- Gain a comprehensive understanding of the processes of feed, products, operating parameters, catalyst operation, unit operation and troubleshooting
- Recognize the recent developments within the field
- Determine catalytic reforming including the products, processes, catalytic reforming units and their operations, catalysts, CCR technologies and catalyst regeneration and new technologies
- Discuss isomerization including isomerization fundamentals, feedstock and product properties, comparison of process schemes and performance, parameters of isomerization units and carryout its proper operation and troubleshooting
- Describe and illustrate hydrotreatment including aims of various treatments, molecular structures, chemical reactions, role and action of catalyst, operating conditions, process scheme and operating variables and dealing with low sulfur content
- Explain and employ sweetening of light cuts and sulfur recovery including their processes, amine absorption, claus process and tail gas treatment

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 is intended for chemical, mechanical or electrical engineers working in refineries and research staff or at least one year experience in this field.

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 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.

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.



- 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 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. Andrew Ladwig is a **Senior Process & Mechanical Engineer** with over **25 years** of extensive experience within the **Oil & Gas, Refinery, Petrochemical & Power** industries. His expertise widely covers in the areas of **Ammonia Manufacturing & Process Troubleshooting, Distillation Towers, Crude Oil Distillation, Fundamentals of Distillation** for Engineers, **Distillation Operation and Troubleshooting, Advanced Distillation Troubleshooting, Distillation Technology, Vacuum Distillation, Ammonia Storage & Loading Systems, Ammonia Plant Operation, Troubleshooting & Optimization, Ammonia Recovery, Ammonia Plant Safety, Hazard of Ammonia Handling, Storage & Shipping, Operational Excellence in Ammonia Plants, Fertilizer Storage Management (Ammonia & Urea), Fertilizer Manufacturing Process Technology, Sulphur Recovery, Phenol Recovery & Extraction, Wax Sweating & Blending, Petrochemical & Fertilizer Plants, Nitrogen Fertilizer Production, Petroleum Industry Process Engineering, Refining Process & Petroleum Products, Refinery Planning & Economics, Safe Refinery Operations, Hydrotreating & Hydro-processing, Separators in Oil & Gas Industry, Gas Testing & Energy Isolations, Gas Liquor Separation, Industrial Liquid Mixing, Wax Bleachers, Extractors, Fractionation, Operation & Control of Distillation, Process of Crude ATM & Vacuum Distillation Unit, Water Purification, Water Transport & Distribution, Steam & Electricity, Flame Arrestors, Coal Processing, Environmental Emission Control, R&D of Wax Blending, Wax Molding/Slabbing, Industrial Drying, Principles, Selection & Design, Process Safety Design, Certified Process Plant Operations, Control & Troubleshooting, Operator Responsibilities, Storage Tanks Operations & Measurements, Tank Design, Construction, Inspection & Maintenance, Atmospheric Tanks, Process Plant Troubleshooting & Engineering Problem Solving, Process Plant Performance, Efficiency & Optimization, Continuous Improvement & Benchmarking, Process Troubleshooting Techniques, Oil & Gas Operation/Introduction to Surface Facilities, Pressure Vessel Operation, Plant & Equipment Integrity, Process Equipment Performance & Troubleshooting, Plant Startup & Shutdown, Startup & Shutdown the Plant While Handling Abnormal Conditions, Flare & Relief System, Process Gas Plant Start-up, Commissioning & Problem Solving, Process Liquid and Process Handling & Measuring Equipment. Further, he is also well-versed in Compressors & Turbines Operation, Maintenance & Troubleshooting, Heat Exchanger Overhaul & Testing Techniques, Balancing of Rotating Machinery (BRM), Pipe Stress Analysis, Valves & Actuators Technology, Inspect & Maintain Safeguarding Vent & Relief System, Certified Inspectors for Vehicle & Equipment, Optimizing Equipment Maintenance & Replacement Decisions, Certified Maintenance Planner (CMP), Certified Planning and Scheduling Professional (AACE-PSP), Material Cataloguing, Specifications, Handling & Storage, Steam Trap Design, Operation, Maintenance & Troubleshooting, Steam Trapping & Control, Column, Pump Technology, Pump Selection & Installation, Centrifugal Pumps Troubleshooting, Pumps Design, Selection & Operation, Pump & Exchangers, Troubleshooting & Design, Rotating Equipment Operation & Troubleshooting, Control & ESD System, Detailed Engineering Drawings, Codes & Standards, Budget Preparation, Allocation & Cost Control, Root Cause Analysis (RCA), Production Optimization, Permit to Work (PTW), Project Engineering, Data Analysis, Process Hazard Analysis (PHA), HAZOP Study, Sampling & Analysis, Training Analysis, Job Analysis Techniques, Storage & Handling of Toxic Chemicals & Hazardous Materials, Hazardous Material Classification & Storage/Disposal, Dangerous Goods, Environmental Management System (EMS), Supply Chain, Purchasing, Procurement, Logistics Management & Transport & Warehousing & Inventory, Risk Monitoring Authorized Gas Tester (AGT), Confined Space Entry (CSE), Personal Protective Equipment (PPE), Fire & Gas, First Aid and Occupational Health & Safety.**

During his career life, Mr. Ladwig has gained his practical experience through his various significant positions and dedication as the **Mechanical Engineer, Project Engineer, Reliability & Maintenance Engineer, Maintenance Support Engineer, Process Engineer, HSE Supervisor, Warehouse Manager, Quality Manager, Business Analyst, Senior Process Controller, Process Controller, Safety Officer, Mechanical Technician, Senior Lecturer and Senior Consultant/Trainer** for various companies such as the Sasol Ltd., Sasol Wax, Sasol Synfuels, just to name a few.

Mr. Ladwig has a **Bachelor's degree in Chemical Engineering** and a **Diploma in Mechanical Engineering**. Further, he is a **Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)** and has delivered various trainings, workshops, seminars, courses and conferences internationally.

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	Module 1: Catalytic Reforming Products
0930 – 0945	Break
0945 – 1100	Module 1: Catalytic Reforming (cont'd) Processes
1100 – 1215	Module 1: Catalytic Reforming (cont'd) Catalytic Reforming Units and their Operations
1215 – 1230	Break
1230 – 1430	Module 1: Catalytic Reforming (cont'd) Catalysts
1430	Lunch & End of Day One

Day 2

0730 – 0930	Module 1: Catalytic Reforming (cont'd) CCR Technologies
0930 – 0945	Break
0945 – 1100	Module 1: Catalytic Reforming (cont'd) Catalyst Regeneration
1100 – 1215	Module 1: Catalytic Reforming (cont'd) New Technologies
1215 – 1230	Break
1230 – 1430	Module 2: Isomerization Isomerization Fundamentals
1430	Lunch & End of Day Two

Day 3

0730 – 0930	Module 2: Isomerization (cont'd) Feedstock and Product Properties
0930 – 0945	Break
0945 – 1100	Module 2: Isomerization (cont'd) Comparison of Process Schemes and Performance
1100 – 1215	Module 2: Isomerization (cont'd) Parameters of Isomerization Units and Their Operation
1215 – 1230	Break
1230 – 1430	Module 2: Isomerization (cont'd) Troubleshooting
1430	Lunch & End of Day Three

Day 4

0730 – 0930	Module 3: Hydrotreatment <i>Aims of Various Treatments • Molecular Structures</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Module 3: Hydrotreatment (cont'd) <i>Chemical Reactions • Role and Action of a Catalyst</i>
1100 – 1215	Module 3: Hydrotreatment (cont'd) <i>Operating Conditions • Process Scheme</i>
1215 – 1230	<i>Break</i>
1230 – 1430	Module 3: Hydrotreatment (cont'd) <i>Operating Variables • Dealing with Low Sulfur Content</i>
1430	<i>Lunch & End of Day Four</i>

Day 5

0730 – 0930	Module 4: Sweetening of Light Cuts and Sulfur Recovery <i>Processes</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Module 4: Sweetening of Light Cuts and Sulfur Recovery (cont'd) <i>Amine Absorption</i>
1100 – 1215	Module 4: Sweetening of Light Cuts and Sulfur Recovery (cont'd) <i>Claus Process</i>
1215 – 1230	<i>Break</i>
1230 – 1400	Module 4: Sweetening of Light Cuts and Sulfur Recovery (cont'd) <i>Tail Gas Treatment</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

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