

COURSE OVERVIEW PE0276
Delayed Coker and Coke Calcination - Basic

Course Title

Delayed Coker and Coke Calcination - Basic

Course Date/Venue

Session 1: June 15-19, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Session 2: October 13-17, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



Course Reference

PE0276



Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes real-life case studies 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 Calcination of Petroleum Coke. It covers the global market trends and the role of calcined petroleum coke (CPC); the types, compositions and properties of raw petroleum coke; the principles, objectives and benefits of calcination process; the equipment and technology in calcination like kilns, calciners and other essential machinery; the quality parameters, key metrics and industry standards of CPC; the environmental considerations, emissions, regulations and sustainable practices; the techniques in raw coke handling and preparation; and the types, design and operational differences of calcination kilns, rotary kiln and shaft kiln.



Further, the course will also discuss the importance of temperature profiles and control systems; optimizing process by maximizing yield, quality and reducing energy consumption; the maintenance practices for calcination equipment and resolving common operational issues; the quality testing methods for CPC like sampling techniques and laboratory analysis; the advanced control strategies for quality assurance; the proper handling and storage methods of calcined coke; and the standards, modes and safety considerations of packaging and transportation.

During this interactive course, participants will learn the customer needs, industry standards and SHE regulations in CPC production; the occupational health and safety in calcination plants; the procedures, drills and communication for emergency response and crisis management; the environmental impact and mitigation in waste management and emission controls; the sustainability practices in CPC production like energy efficiency and carbon footprint reduction; the innovations in calcination technology and the best practices and alternative energy sources for energy management and conservation; the global market trends and economic aspects; the leadership, efficiency, optimization and management in calcination operations; and the challenges and opportunities in CPC production.

Course Objectives

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

- Apply and gain an in-depth knowledge on calcination of petroleum coke
- Discuss the global market trends and the role of calcined petroleum coke (CPC)
- Identify the types, compositions and properties of raw petroleum coke as well as the principles, objectives and benefits of calcination process
- Recognize the equipment and technology in calcination like kilns, calciners and other essential machinery
- Discuss the quality parameters, key metrics and industry standards of CPC as well as employ environmental considerations, emissions, regulations and sustainable practices
- Implement raw coke handling and preparation as well as enumerate the types, design and operational differences of calcination kilns, rotary kiln and shaft kiln
- Determine the importance of temperature profiles and control systems as well as optimize process by maximizing yield and quality and reducing energy consumption
- Apply maintenance practices for calcination equipment and resolve common operational issues
- Carryout quality testing methods for CPC like sampling techniques and laboratory analysis
- Employ advanced control strategies for quality assurance including the handling and storage methods of calcined coke
- Recognize the standards, modes and safety considerations of packaging and transportation
- Identify the customer needs and industry standards as well as discuss the SHE regulations in CPC production
- Implement occupational health and safety in calcination plants as well as the procedures, drills and communication for emergency response and crisis management
- Explain the environmental impact and mitigation in waste management and emission controls
- Apply sustainability practices in CPC production like energy efficiency and carbon footprint reduction

- Discover the innovations in calcination technology and employ the best practices and alternative energy sources for energy management and conservation
- Discuss the global market trends and economic aspects, apply leadership, efficiency, optimization and management in calcination operations and recognize challenges and opportunities in CPC production

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 calcination of petroleum coke for operation engineers, process engineers, refinery engineers, inspectors, maintenance and other technical staff.

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.

Accommodation


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

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.

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 (Mervyn Geoffrey Frampton), BSc, PMI-PMP, CSSBB, is a **Senior Process Engineer** with over **40 years** of industrial experience within the **Oil & Gas, Refinery, Petrochemical** and **Utilities** industries. His expertise lies extensively in the areas of **Process Unit Operations & Maintenance, Operations Asset Integrity, Flare, Blowdown & Pressure Relief Systems** Operation, Maintenance & Troubleshooting, Dynamics of the **Petrochemicals Industry**, Understanding the **Global Petrochemical Industry, Petrochemicals Analysis, Naphtha & Condensate** in **Petrochemicals, Feedstock Handling & Storage, Natural Gas Liquids & Petrochemical Industry** and **Markets, Refinery & Process Industry, Refinery Optimization, Refinery Operations Troubleshooting, Refinery Production Operations, Refinery Process Safety, Process Safety Design, Petroleum Refinery Process, Asset Operational Integrity, Refinery Induction, Crude Distillation, Crude Oil Properties, Distillation Column Operation & Control, Oil Movement Storage & Troubleshooting, Root Cause Analysis (RCA)** for **Process & Equipment Failures, Process Equipment Design, 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, 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, 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, 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, Project Engineering Manager, Construction Manager, Site Manager, Area Manager, Procurement Manager, Factory Manager, Technical Services Manager, Senior Project 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 Project Management Professional (PMI-PMP)**, a **Certified Six Sigma Black Belt (CSSBB)** from **The International Six Sigma Institute**, a **Certified Internal Verifier/Trainer/Assessor** by the **Institute of Leadership & Management (ILM)**, a **Certified Instructor/Trainer** and has delivered numerous trainings, courses, workshops, conferences and seminars internationally.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the workshop 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>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0930	Overview of the Petroleum Coke Industry: Historical Background, Global Market Trends & the Role of CPC
0930 – 0945	<i>Break</i>
0945 – 1030	Properties of Raw Petroleum Coke: Types, Compositions, & Properties
1030 – 1130	Introduction to Calcination Process: Basic Principles, Objectives & Benefits
1130 – 1215	Equipment & Technology in Calcination: Kilns, Calciners & other Essential Machinery
1215 – 1230	<i>Break</i>
1230 – 1330	Quality Parameters of CPC: Defining Quality, Key Metrics & Industry Standards
1330 – 1420	Environmental Considerations: Emissions, Regulations & Sustainable Practices
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0830	Raw Coke Handling & Preparation: Storage, Pre-Treatment & Conveying Systems
0830 – 0930	Calcination Kilns – Types & Operations: Rotary Kiln, Shaft Kiln - Design & Operational Differences
0930 – 0945	<i>Break</i>
0945 – 1100	Temperature Control & Monitoring: Importance of Temperature Profiles, Control Systems
1100 – 1215	Process Optimization: Maximizing Yield & Quality, Reducing Energy Consumption
1215 – 1230	<i>Break</i>
1230 – 1330	Maintenance Practices for Calcination Equipment: Preventive & Predictive Maintenance
1330 – 1420	Troubleshooting Common Operational Issues: Identifying & Resolving Frequent Problems
1420 – 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0830	Quality Testing Methods for CPC: Sampling Techniques, Laboratory Analysis
0830 – 0930	Advanced Control Strategies for Quality Assurance: Process Control Technologies, Feedback Systems
0930 – 0945	<i>Break</i>
0945 – 1100	Handling & Storage of Calcined Coke: Methods, Equipment & Safety
1100 – 1215	Packaging & Transportation: Standards, Modes & Safety Considerations

1215 – 1230	Break
1230 – 1330	Customer Specifications & Compliance: Understanding Customer Needs & Industry Standards
1330 – 1420	Case Studies of Quality Control Challenges: Real-World Examples & Solutions
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4

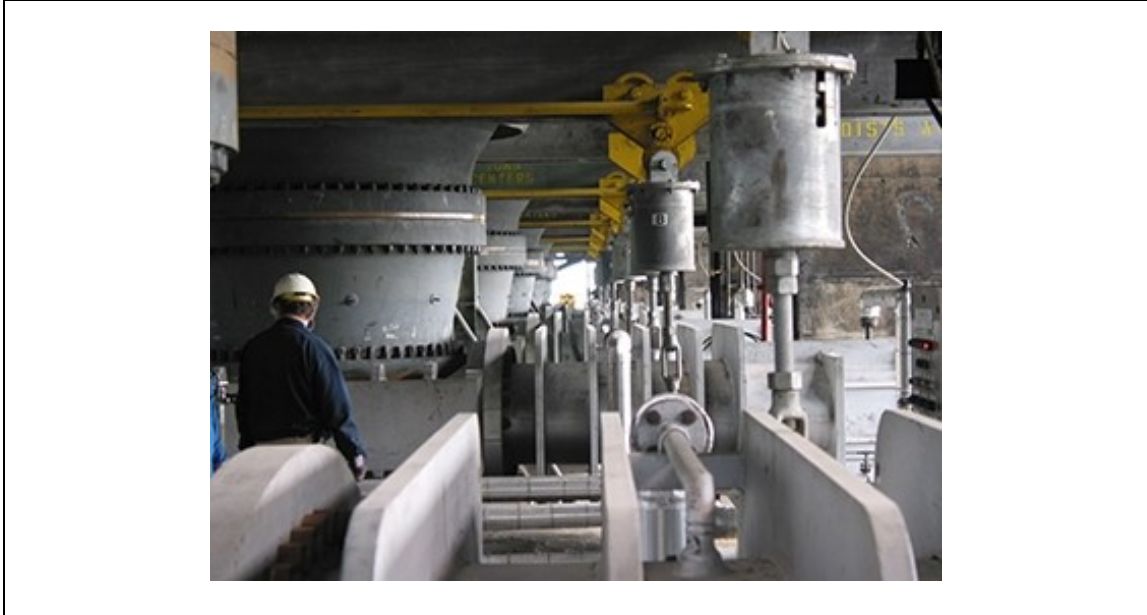
0730 – 0830	SHE Regulations in CPC Production: Applicable Laws & Guidelines
0830 – 0930	Occupational Health & Safety in Calcination Plants: Risk Assessment, Personal Protective Equipment, Training
0930 – 0945	Break
0945 – 1100	Emergency Response & Crisis Management: Procedures, Drills & Communication
1100 – 1215	Environmental Impact & Mitigation: Waste Management, Emission Controls
1215 – 1230	Break
1230 – 1330	Sustainability Practices in CPC Production: Energy Efficiency, Carbon Footprint Reduction
1330 – 1420	Workplace Safety Culture: Building Awareness & Continuous Improvement
1420 – 1430	Recap
1430	Lunch & End of Day Four

Day 5

0730 – 0830	Innovations in Calcination Technology: Emerging Technologies & their Potential Impact
0830 – 0930	Energy Management & Conservation: Best Practices, Alternative Energy Sources
0930 – 0945	Break
0945 – 1100	Global Market Trends & Economic Aspects: Market Dynamics, pricing, & Forecasts
1100 – 1230	Management of Calcination Operations: Leadership, Efficiency & Optimization Strategies
1230 – 1245	Break
1245 – 1345	Challenges & Opportunities in CPC Production: Global Challenges, Opportunities for Growth
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

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org