COURSE OVERVIEW PE0785
Refinery Operational Economics, Planning & Profitability

Course Title
Refinery Operational Economics, Planning & Profitability

Course Date/Venue
February 08-12, 2026/TBA Meeting Room, Pullman Doha Westbay, Doha, Qatar

Course Reference
PE0785

3.0 CEUs (30 PDHs) AWARD

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using the "MS Excel" applications.

This course is designed to provide participants with a detailed and up-to-date overview of Refinery Operational Economics, Planning & Profitability. It covers the planning and scheduling in petroleum refineries, refinery complexity, refinery configuration, integrated refineries and choice of crude; the crude oil scheduling, capacity utilization of crudes and operational efficiency; improving product movements and releasing tankages; the crude assay, intermediate feed characteristics, yields and properties; the different process units, storage tanks and custody transfer/measurements; the product blending rules, product specifications, new trends in fuel production and environmental issues; and the crude oil pricing regimes, product netback, concepts of operational profitability including gross refining margin (GRM), net refining margin and contribution margin.

During this interactive course, participants will learn the refinery configuration covering topping, hydroskimming, cracking, full conversion and niche products; the production plans, selecting feedstock, feasibility and optimality; the optimal product mix, marginal economics, investment opportunities and planning versus scheduling; the blending methods, process models, simple stock balances (spreadsheet), linear programming (LP's), non-linear programming (NLP's), distributed error recursion and integer programming; the various model types pertaining to blending, multi-refinery and distribution, single refinery and time period; and the key crude and product qualities as well as crude and product pricing.

Course Objectives

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

- Apply and gain a comprehensive knowledge in operational economics, planning and profitability of modern oil refineries
- Discuss planning and scheduling in petroleum refineries, refinery complexity, refinery configuration, integrated refineries and choice of crude
- Carryout crude oil scheduling and recognize the capacity utilization of crudes and operational efficiency
- Improve product movements and releasing tankages as well as discuss crude assay, intermediate feed characteristics, yields and properties
- Identify the different process units, storage tanks and custody transfer/measurements
- Apply product blending rules and review product specifications, new trends in fuel production and environmental issues
- Discuss crude oil pricing regimes, product netback and concepts of operational profitability including gross refining margin (GRM), net refining margin and contribution margin
- Carryout refinery configuration covering topping, hydroskimming, cracking, full conversion and niche products
- Apply production plans, feedstock selection, feasibility and optimality
- Discuss optimal product mix, marginal economics, investment opportunities and planning versus scheduling
- Identify various planning tools covering blending methods, process models, simple stock balances (spreadsheet), linear programming (LP's), non-linear programming (NLP's), distributed error recursion and integer programming
- Identify the various model types pertaining to blending, multi-refinery and distribution, single refinery and time period
- Recognize key crude and product qualities as well as crude and product pricing

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 refinery operational economics, planning and profitability. planning engineers, process engineers, production engineers, scheduling engineers, marketing engineers and estimation engineers will definitely benefit from the practical approach of the course. finance managers, commercial managers, estimation managers, section heads, supervisors and refineries/process plant consultants will gain an excellent knowledge from the operational aspects of this course.

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

Haward's 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**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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. Abdul Ghani Anadani is a **Senior Process Engineer** with over **30 years** of industrial experience within the **Oil**, **Gas**, **Refinery** and **Petrochemical** industries. His expertise widely covers in the areas of **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, Flare, Blowdown & Pressure Relief Systems, **Oil & Gas Field Commissioning** Techniques, **Flare**, Blowdown & Pressure Relief Systems, Operation, Maintenance & Troubleshooting, **Flare** System, **Pressure Vessel** Operation, **Gas Processing**, **Chemical** Engineering. He is also well versed in **Pumps**, **Gas & Steam Turbines**, **Compressors**, **Heat Exchanger**, **Safety Relief Valves**, **Pipelines**, **Piping**, **Pressure Vessels**, **Diesel Engine & Crane** Maintenance, Maintenance Management (Preventive, Predictive, Breakdown), **Reliability** Management, **Condition-Based Monitoring**, **Rotating Equipment**, **Tanks & Tank Farms**, **Pneumatic** System, **Static** Equipment, Failure Analysis, **Auxiliary** Systems, **Ventilation** Systems, **Fuel Supply** Systems, **Emission Control**, **Preventive & Predictive** Maintenance, **Couplings & Shaft Alignment**, **Lubrication** Technology, **Blower & Fan**, **Process** Equipment, **Bearings**, **Motors**, **Gears** and Mechanical **Seals**. Further he is well-versed in **Hydrodesulfurization & Hydrogenation**, Steam **Cracking**, **Acid Gas** Removal & Treatment, **Sulfur** Production & Recovery, **Ethylene** Gas, **Furnaces**, Filtration, Distillation, Extraction, Salt Production, Caustic Soda, Ammonia, Chlorine, Benzene, **P&ID** & Process Modifications, **Distillation Column**, **Process Equipment** Design, **Process Plant** Optimization, **Revamping & Debottlenecking**, **Process Plant** Troubleshooting & Engineering Problem Solving, **Process Plant** Start-up & Commissioning, **Oil & Gas Field Commissioning** Techniques, **Pressure Vessel** Operation, **Gas Processing**, **Process Reactors** Start-Up & Shutdown, **Gasoline Blending** for Refineries, **De-Sulfurization** Technology, **Catalyst** Technology, **Catalytic Reforming**, **Sulphur** Extraction Plant, **Crude Distillation Unit**, **Acid Plant Revamp** and **Crude Pumping**.

During his career life, Mr. Abdul Ghani has gained his practical and field experience through his various significant positions and dedication as the **Technical Manager**, **Shift Supervisor**, **Senior Project Engineer**, **Project Engineer**, **Recruited Engineer**, **Assistant Engineer**, **Technical Consultant**, **Deputy Shift Foreman** and **Shift Foreman** for numerous international companies like **QAPCO** and Banyas Refinery.

Mr. Abdul Ghani has a **Consultant** degree in **Chemical Engineering & Technology**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Auditor** as per **ISO 9000-2001**, a member of the Syrian Engineers Chamber and has delivered numerous trainings, courses, seminars and workshops internationally.

Course Fee

US$ 6,000 per Delegate. 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 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: ***Sunday, 08th of February 2026***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Overview of Planning & Scheduling in Oil Refineries***
0930 – 0945	*Break*
0945 – 1030	***Refinery Complexity***
1030 – 1100	***Refinery Configuration***
1100 – 1130	***Integrated Refineries***
1130 – 1215	***Choice of Crude***
1215 – 1230	*Break*
1230 – 1315	***Crude Oil Scheduling***
1315 – 1400	***Capacity Utilization of Crudes & Operational Efficiency***
1400 – 1420	***Workshop - Cut-point Optimization***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Monday, 09th of February 2026***

0730 – 0830	***Improving Product Movements & Releasing Tankages***
0830 – 0930	***Crude Assay***
0930 – 0945	*Break*
0945 – 1030	***Intermediate Feed Characteristics***
1030 – 1130	***Yields & Properties***

1130 – 1215	***Different Process Units***
1215 – 1230	*Break*
1230 – 1315	***Storage Tanks***
1315 – 1400	***Custody Transfer / Measurements***
1400 – 1420	***Class Exercises: Using Excel - Yield Optimization***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: Tuesday, 10th of February 2026

0730 – 0930	***Product Blending Rules***
0930 – 0945	*Break*
0945 – 1030	***Product Specifications***
1030 – 1130	***New Trends in Fuel Production***
1130 – 1215	***Environmental Issues***
1215 – 1230	*Break*
1230 – 1330	***Crude Oil Pricing Regimes***
1330 – 1420	***Product Netback***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4: Wednesday, 11th of February 2026

0730 – 0930	***Concepts of Operational Profitability*** *Gross Refining Margin (GRM) ● Net Refining Margin ● Contribution Margin*
0930 – 0945	*Break*
0945 – 1130	***Refinery Configuration*** *Topping ● Hydroskimming ● Cracking (FCC & Hydrocracking)*
1130 – 1215	***Refinery Configuration (cont'd)*** *Full Conversion (Coking) ● Niche Products (Lubes, Asphalt, Solvents, Aromatics, other Petrochemicals)*
1215 – 1230	*Break*
1230 – 1400	***Planning Objectives*** *Production Plans (Unit Operating Goals, Blending Operations) ● Feedstock Selection ● Feasibility ● Optimality (Minimum Cost, Maximum Profit) • Optimal Product Mix ● Marginal Economics ● Investment Opportunities ● Planning versus Scheduling*
1400 - 1420	***Case Study***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

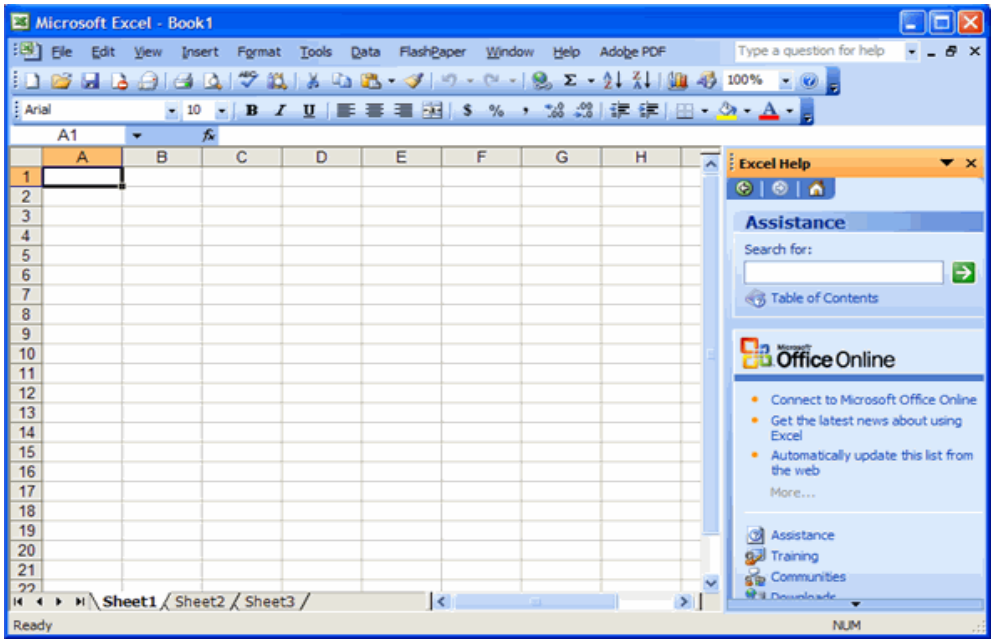
Day 5: Thursday, 12th of February 2026

0730 – 0930	***Planning Tools*** *Blending Methods (Linear (Volume/Weight), Blending Indices, Interaction Coefficients) ● Process Models (Fixed Yield, Operational Modes, Simulation)*
0930 – 0945	*Break*
0945 – 1100	***Planning Tools (cont'd)*** *Modeling Tools (Simple Stock Balances (Spreadsheet), Linear Programming (LP's), Feasibility, Linear Relationships, Non-Linear Programming (NLP's), Feasibility, Local Optima, Distributed Error Recursion & Integer Programming) ● Model Types (Blending, Single Refinery, Multi-Refinery and Distribution & Time Period)*
1100 – 1215	***Key Crude & Product Qualities*** *Sulfur & Gravity ● Other Properties • Environmental Regulations*

1215 – 1230	*Break*
1230 - 1300	***Crude & Product Pricing*** *Pricing Basis (FOB, CIF & Import Parity)*
1300 – 1345	***Case Study***
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Hands-on Practical Sessions

Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using "MS-Excel" application.



MS Excel

Course Coordinator

Jaryl Castillo, Tel: +974 6652 9196, Email: jaryl@haward.org