



COURSE OVERVIEW PE0785

Refinery Operational Economics, Planning & Profitability

Course Title

Refinery Operational Economics, Planning & Profitability

Course Date/Venue

October 12-16, 2026/TBA Meeting Room, The Marble Arch Hotel by Thistle, London, United Kingdom

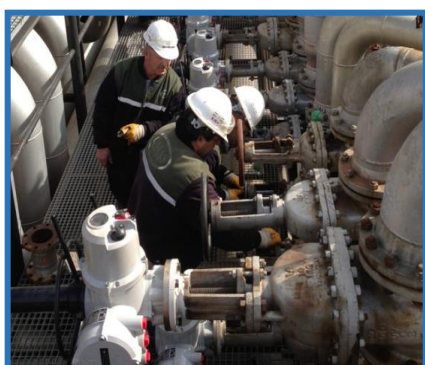
Course Reference

PE0785

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/Outcomes & Benefits for the Participants

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:

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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**. 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.

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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 Fee

US\$ 8,800 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 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:



Dr. John Petrus, PhD, MSc, BSc, is a **Senior Process Engineer** with over **30 years** of **onshore & offshore** experience within the **Oil & Gas, Refinery and Petroleum** industries. His wide experience covers in the areas of **De-Sulfurization Technology, Process Troubleshooting, Distillation Towers, Fundamentals of Distillation** for Engineers, **Distillation Operation and Troubleshooting, Advanced Distillation Troubleshooting, Distillation Technology, Vacuum Distillation, Distillation Column Operation & Control, Oil Movement Storage & Troubleshooting, 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, Pressure Vessel Operation, Gas Processing, Chemical Engineering, Process Reactors Start-Up & Shutdown, Gasoline Blending for Refineries, **Urea Manufacturing Process Technology, Continuous Catalytic Reformer (CCR), Advanced Operational & Troubleshooting Skills, Principles of Operations Planning, Rotating Equipment Maintenance & Troubleshooting.** Further he is also well versed in **Rotating Machinery Principles & Applications, Rotating Equipment Selection, Operation, Maintenance, Inspection & Troubleshooting, Rotating Machine/Equipment in Industry, Control Valves & Actuators, PSV Maintenance & Testing, Pump Selection, Installation, Performance & Control, Screw Compressor Theory and Troubleshooting, Reliability-Centered Maintenance (RCM), Preventive & Predictive Maintenance, Spare Parts Planning & Inventory Management, Computerized Maintenance Management Systems (CMMS), Process Plant Shutdown & Turnaround, Maintenance Optimization & Best Practices, Reliability Centered Maintenance Principles & Application, Efficient Shutdowns, Turnaround & Outages, Effective Reliability Maintenance & Superior Maintenance Strategies, Integrity & Asset Management, Total Plant Reliability Maintenance, Vibration Measurement, Advanced Analytics in Oil & Gas, Business Intelligence Data Analytics, Audit Analytics & Computer-Assisted Audit Techniques (CAATs), Basic Database Concepts & Data Formats, Data Analysis Cycle & Best Practices, Data Importing & Integrity Verification, Advanced Analytics Tools in Auditing, Leveraging AI & Machine Learning in Audits, Data Mining Techniques for Auditors, Data Analytics for Managerial Decision Making, Business Process Analysis, Mapping & Modeling, Research Methods & Analysis, Statistical Data Needs Analysis, Oil & Gas Industry Business Environment & Competitive Intelligence Gathering & Analysis, Petroleum Economics & Risk Analysis, Certified Data Analysis, Risk Management & SWIFT Analysis, Best Practices Management System (BPMS), GIS System Management, Database Management, Strategic Planning, Best Practices and Workflow, Quality Management, Project Management and Risk Assessment & Uncertainty Evaluation.** Further, he is also well-versed in **seismic interpretation, mapping & reservoir modelling tools like Petrel software, LandMark, Seisworks, Geoframe, Zmap** and has extensive knowledge in **MSDos, Unix, AutoCAD, MAP, Overlay, Quicksurf, 3DStudio, Esri ArcGIS, Visual Lisp, Fortran-77 and Clipper.** Moreover, he is a world **expert in analysis and modelling of fractured prospects and reservoirs** and a **specialist and developer of fracture modelling software tools** such as **FPDM, FMX and DMX Protocols.**

During his career life, Dr. Petrus held significant positions and dedication as the **Executive Director, Senior Geoscience Advisor, Exploration Manager, Project Manager, Manager, Process Engineer, Mechanical Engineer, Maintenance Engineer, Chief Geologist, Chief of Exploration, Chief of Geoscience, Senior Geosciences Engineer, Senior Explorationist, Senior Geologist, Geologist, Senior Geoscientist, Geomodeller, Geoscientist, CPR Editor, Resources Auditor, Project Leader, Technical Leader, Team Leader, Scientific Researcher** and **Senior Instructor/Trainer** from various international companies and universities such as the **Dragon Oil Holding Plc., ENOC, MENA, ENI Group of Companies, Ocre Geoscience Services (OGS), Burren RPL, Ministry of Oil-Iraq, Eni Corporate University, Stanford University, European Universities, European Research Institutes, NorskHydro Oil Company, Oil E&P Companies,** just to name a few.

Dr. Petrus has a **PhD in Geology and Tectonophysics** and **Master and Bachelor degrees in Earth Sciences** from the **Utrecht University, The Netherlands.** Further, he is a **Certified Instructor/Trainer, a Certified Trainer/Assessor/Internal Verifier** by the **Institute of Leadership & Management (ILM),** a Secretary and Treasurer of Board of Directors of Multicultural Centre, Association Steunfonds SSH/SSR and Founding Member of Sfera Association. He has further published several scientific publications, journals, research papers and books and delivered numerous trainings, workshops, courses, seminars and conferences internationally.



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.

Learning Design & Customization

This course can be customized to the exact requirements of clients. Haward Technology is so proud of our huge capabilities in tailoring our courses to the training needs of our valued clients.

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: Monday, 12th of October 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: Tuesday, 13th of October 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: Wednesday, 14th of October 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: Thursday, 15th of October 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: Friday, 16th of October 2026

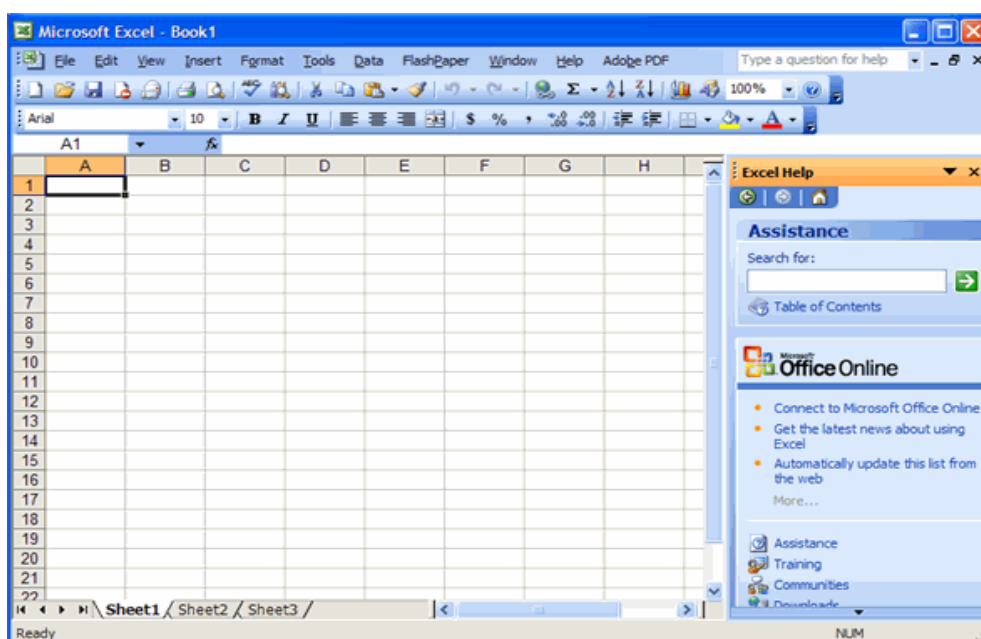
0730 – 0930	Planning Tools Blending Methods (Linear (Volume/Weight), Blending Indices, Interaction Coefficients) • Process Models (Fixed Yield, Operational Modes, Simulation)
0930 – 0945	Break
0945 – 1100	Planning Tools (cont'd) Modeling Tools (Simple Stock Balances (Spreadsheet), Linear Programming (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 <i>Sulfur & Gravity • Other Properties • Environmental Regulations</i>
1215 – 1230	<i>Break</i>
1230 - 1300	Crude & Product Pricing <i>Pricing Basis (FOB, CIF & Import Parity)</i>
1300 – 1345	Case Study
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

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

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