COURSE OVERVIEW PE0786
Principles of Operations Planning

Course Title
Principles of Operations Planning

Course Date/Venue
Session 1: February 18-22, 2024/The Mouna Meeting Room, The H Dubai Hotel, Sheikh Zayed Rd - Trade Centre, Dubai, UAE
Session 2: March 03-07, 2024/Kizkulesi, Crown Plaza Istanbul Asia Hotels & Convention Center, Istanbul, Turkey

Course Reference
PE0786

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 complete and up-to-date overview of the principles of operations planning. It covers the concepts of operational profitability including gross plant margin, net plant margin and contribution margin; the process plant configuration covering reactors, separators, product handling system, QA/QC system, feedstock and packing/packaging; the planning objectives that includes production plans, selecting feedstock, feasibility, optimality, optimal product mix, marginal economics, investment opportunities and planning versus scheduling; the various planning tools; the blending methods and process models; and the modeling tools covering simple stock balances (spreadsheet), linear programming (LP's), non-linear programming (NLP's), distributed error recursion and integer programming.

Further, the course will also cover the various model types pertaining to mixing, multi-product and distribution, single product and time period; the product qualities; the product pricing; the practical plant modeling; the market dynamics covering the supply and demand vise as well as global versus local markets; managing risk using term contracts, hedging and risk versus reward; and the performance measures for benchmark margin analysis, model validation and back-casting.

Course Objectives

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

- Apply and gain a comprehensive knowledge on the principles of operations planning
- Discuss the concepts of operational profitability covering gross plant margin, net plant margin and contribution margin
- Carryout process plant configuration comprising of reactors, separators, product handling system, QA/QC system, feedstock and packing/packaging
- Identify and carryout planning objectives including production plans, selecting feedstock, feasibility, optimality, optimal product mix, marginal economics, investment opportunities and planning versus scheduling
- List the various planning tools, employ mixing methods and illustrate process models
- Enumerate modeling tools covering 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 mixing, multi-product and distribution, single product and time period
- Describe product qualities and pricing
- Illustrate practical plant modeling that includes simple LP construction, pooling problem, delta-base modeling, convexity constraints, marginal values or shadow prices, product ranking and evaluation as well as weight and volume basis
- Recognize market dynamics covering the supply and demand vise as well as global versus local markets
- Manage risk using term contracts, hedging and risk versus reward
- Employ performance measures covering benchmark margin analysis, model validation and back-casting

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, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of the operations planning for planning engineers, process engineers, operations engineers, production engineers, scheduling engineers, marketing engineers and estimation engineers. Finance managers, commercial managers, estimation managers, section heads, supervisors and 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

Certificates are accredited by the following international accreditation organizations:-

- 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.

- 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.

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. Henry Beer is a **Senior Process Engineer** with over **35 years** of indepth industrial experience within the **Petrochemical**, **Oil & Gas** industries specializing in **Process Plant** Troubleshooting, P**rocess Plant Optimization** Technology, **Engineering Problem Solving**, **Process Plant** Performance & Efficiency, **Process Plant** Start-up & Shutdown, **Process Plant** Commissioning, **Process Plant** Turn-around & Shutdown, **Polymers**, **Plastics**, **Polyolefin** & **Catalysts**, **Polymerization**, **Thermal Analysis Techniques**, **Rheology**, **Thermoplastics**, **Thermosets**, **Coating Systems** and **Fibre Reinforced Polymer Matrix Composites**. Further, he is also well-versed in **Catalyst Manufacturing Techniques**, **Fuel Systems Management**, **Aviation Fuel**, **Diesel**, **Jet Fuel**, **Petrol** and **IP Octane**, **Cetane Control** and related Logistics, Road, Rail and Pipeline Distribution, **Process Design** and **Optimisation**, **Boiler Feed Water Preparation**, **Flocculation Sedimentation**, **Hot Lime Water Softening Processes**, **Desalination Processes**, **Reverse Osmosis**, **Molecular Sieves**, activated **Sludge Aerobic/Anaerobic**, **Sludge Removal** and **Incineration Process Control**, **Domestic Sewage Plants Optimisation**, **Process Cooling Water System**, **High Pressure** and **Low Pressure Tank Farm Management**, **Hydrocarbon** and **Chemical products** and **GTL** (**Gas to Liquids**).

During his career life, Mr. Beer holds significant key positions such as the **Director**, **Global Commissioning Manager**, **Senior Business Analyst**, **Process Engineer**, **Chemical Engineer**, **Senior Technician**, **Technical Sales Engineer**, **Entrepreneur**, **Financial Consultant**, **Business Analyst**, **Business Financial Planner** and **Independent Financial Planner** to various international companies such as the **Sasol**, **SASOLChem**, **TAG Solvents**, **Virgin Solvent Products**, **SARS** & **SAPIA** (**South African Petroleum Industry Association**) and **RFS Financial Services** (**Pty**) **Ltd**.

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

Dubai	**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.
Istanbul	**US$ 6,000** per Delegate + **VAT**. This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), 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 – 0900	***Concepts of Operational Profitability*** *Gross Plant Margin ● Net Plant Margin ● Contribution Margin*
0900 – 0930	***Process Plant Configuration*** *Reactors • Separators • Product Handling System*
0930 – 0945	*Break*
0945 – 1215	***Process Plant Configuration (cont'd)*** *QA/QC System • Feedstock • Packing/Packaging*
1215 – 1230	*Break*
1230 – 1420	***Case Study***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0930	***Planning Objectives*** *Production Plans (Unit Operating Goals, Operations) ● Feedstock Selection ● Feasibility ● Optimality (Minimum Cost, Maximum Profit)*
0930 – 0945	*Break*
0945 – 1100	***Planning Objectives (cont'd)*** *Optimal Product Mix ● Marginal Economics ● Investment Opportunities ● Planning versus Scheduling*
1100 – 1215	***Planning Tools*** *Mixing Methods (Linear (Volume/Weight), Mixing Indices, Interaction Coefficients) ● Process Models (Fixed Yield, Operational Modes, Simulation)*
1215 – 1230	*Break*
1230 – 1420	***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)*
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Planning Tools (cont'd)*** *Model Types (Mixing, Single Product, Multi-Product and Distribution & Time Period)*
0930 – 0945	*Break*
0945 – 1100	***Product Qualities*** *Chemical Properties • Physical Properties • Product Specifications*
1100 – 1215	***Product Qualities (cont'd)*** *Codes & Standards • Environmental Regulations*
1215 – 1230	*Break*
1230 – 1420	***Case Study***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

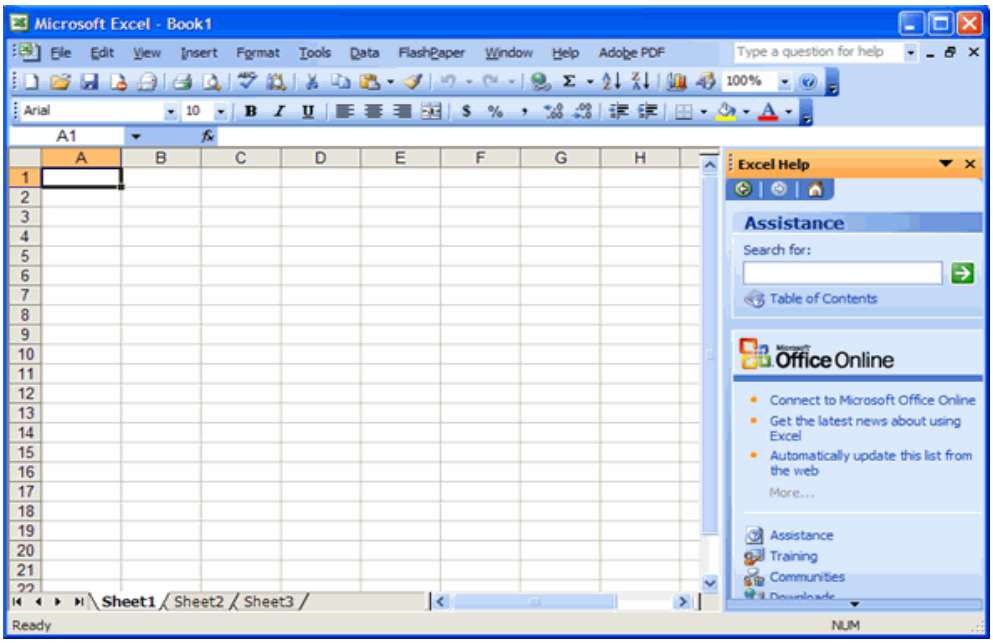
0730 – 0930	***Product Pricing*** *Pricing Basis (FOB, CIF & Import Parity)*
0930 – 0945	*Break*
0945 – 1100	***Practical Plant Modeling*** *Constructing a Simple LP ● The Real World is Non-Linear (The Pooling Problem, Delta-Base Modeling & Convexity Constraints) ● Marginal Values or Shadow Prices*
1100 – 1215	***Practical Plant Modeling (cont'd)*** *Product Ranking & Evaluation ● Weight versus Volume Basis*
1215 – 1230	*Break*
1230 – 1420	***Case Study***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 – 0930	***Market Dynamics*** *The Supply-Demand Vise ● Global versus Local Markets*
0930 – 0945	*Break*
0945 – 1100	***Managing Risk*** *Term Contracts ● Hedging (Futures & Arbitrage) ● Risk versus Reward*
1100 – 1215	***Performance Measures*** *Benchmark Margin Analysis ● Model Validation ● Back-Casting ● "The Farmer & the Bale of Hay"*
1215 – 1230	*Break*
1230 – 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 arranged for all participants throughout the course using **MS Excel applications**.



MS Excel

Course Coordinator

Kamel Ghanem, Tel: +971 2 30 91 714, Email: kamel@haward.org