

COURSE OVERVIEW PE0786
Principles of Operations Planning

Course Title

Principles of Operations Planning

Course Reference

PE0786

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Date/Venue

Session(s)	Date	Venue
1	September 08-12, 2024	Horus Meeting Room, Holiday Inn & Suites Maadi, Cairo, Egypt
2	November 17-21, 2024	
3	January 12-16, 2025	

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 wise 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

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.

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:-


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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.

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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.

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. Saad Bedir, MSc, BSc, is a Senior Chemical Engineer with over 30 years of extensive experience in the Power, Petrochemical, Oil & Gas and Cement industries. He is well-versed in the areas of Introduction to Process Troubleshooting, Polyethylene Manufacturing & Process Troubleshooting, Polyethylene Flexible Packaging, Polyethylene Wire & Cable, Polymers, Polymers & Composites, Distillation Column Operation & Control, Polymers & Polymerization, Oil Movement Storage & Troubleshooting, Process Equipment Design, Applied Process Engineering Elements, Polymer & Materials Engineering, Polyethylene Processing Techniques, Advanced Polymer Chemistry, Plastics Technology, LLDPE Productions & Utilization, Process Plant Optimization, Heat & Power Consumption, Heat Transfer, Clean Energy & Power Saving, Fuel Handling System, Oil Movement & Operation, Oil Production, Gas Conditioning & Processing, Plastic Additives, Process Plant Performance & Efficiency, Plant Optimization and Process Operations. His expertise also includes the implementation of Environmental Impact Assessment (EIA), OHSAS 18001, ISO 9001, ISO 14001, QHSE Management Planning, Air Quality Management, Health, Fire, Safety, Security & Environmental Codes of Practice, Legislations and Procedures. Crisis & Business Continuity Management Planning, Emergency Response & Procedures, Industrial Security Risk Assessment & Management, Behavioural Safety, Incident & Accident Investigation, Integrated EHS Aspects, Risk Assessment & Hazard Identification, Environmental Audits, Hazardous & Non-Hazardous Waste Management, Confined Space Safety, SHEMS Principles, Process Safety, Basic & Advanced Construction Safety, Rig & Barge Inspection, Safety & Occupational Health Awareness, Loss Control, Lifting & Slings, Marine Pollution Hazards & Control, Ground Contamination & Reclamation Processes, Waste Management & Recycling, HAZOP, HAZID, HSEIA, QRA, Hazardous Area Classification, Radiation Protection, Active and Positive Fire Fighting, Fire & Gas Detection Systems, Fire Fighting Systems, Fire Proofing, ESD, Escape Routes. Presently, he is the HSE Director for one of the largest and renowned companies in the Middle East, wherein he takes charge of all HSE and security operations of the company.

Mr. Saad's vast professional experience in directing & managing process operations and health, safety and the environment aspects as per OSHA framework and guidelines can be traced back to his stint with a few international companies like **Saudi ARAMCO, CONOCO, Kuwait Oil Co. (KOC)**, etc, where he worked as the **Field Senior Process Consultant** handling major projects and activities related to the discipline. Through these, he gained much experience and knowledge in the implementation and maintenance of **internationally accepted principles** of process operations. Through this, he has also gained knowledge regarding international safety standards for the National Fire Protection Association (**NFPA**), the American Petroleum Institute (**API**), Safety of Life at Sea (**SOLAS**), and Safety for Mobile Offshore Drilling Unit (**MODU**).

Mr. Saad has a **Bachelor's degree in Chemistry** from the **Ain Shams University** and a **NEBOSH** certificate holder. Further, he is a **Certified Instructor/Trainer**, a **Certified Lead Auditor** for **OHSAS 18001, ISO 9001, ISO 14001** and a **member of the Egyptian Syndicate & Scientific Professions**. His passion for development and acquiring new skills and knowledge has taken him all over the Middle East to attend and share his expertise in numerous trainings and workshops.

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 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

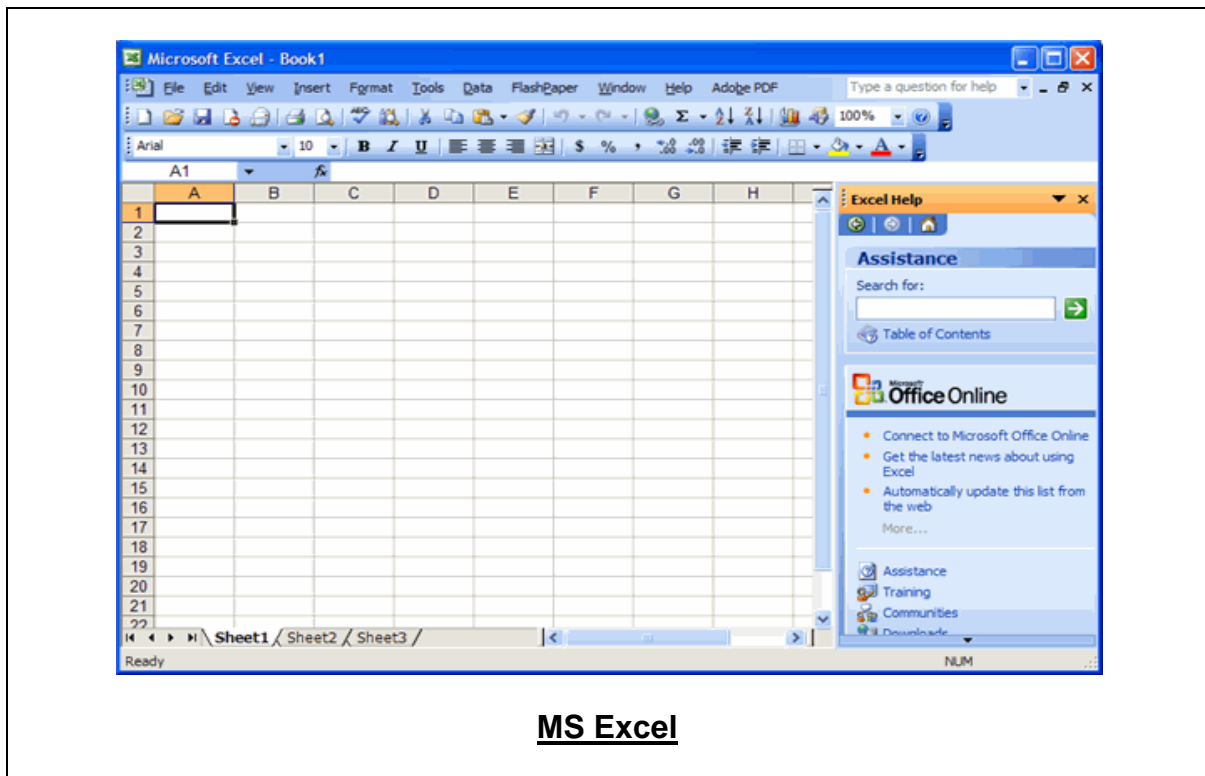
0730 – 0930	Market Dynamics The Supply-Demand Vise • Global versus Local Markets
0930 – 0945	Break
0945 – 1100	Managing Risk Term Contracts • Hedging (Futures & Arbitrage) • Risk versus Reward
1100 – 1215	Performance Measures Benchmark Margin Analysis • Model Validation • Back-Casting • “The Farmer & the Bale of Hay”
1215 – 1230	Break
1230 – 1345	Case Study



1345 – 1400	<i>Course Conclusion</i>
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 arranged for all participants throughout the course using **MS Excel applications.**



Course Coordinator

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