COURSE OVERVIEW PE0792
Aromatics Manufacturing Process Technology
Benzene & Paraxylene

Course Title
Aromatics Manufacturing Process Technology: *Benzene & Paraxylene*

Course Reference
PE0792

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

Course Date/Venue

Session(s)	Date	Venue
1	January 26-30, 2025	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UA
2	April 20-24, 2025	TBA Meeting Room, Taksim Square Hotel, Istanbul, Turkey
3	July 06-10, 2025	Al Khobar Meeting Room, Hilton Garden Inn, Al Khobar, KSA
4	October 20-24, 2025	Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Description

This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

Aromatics are a major sector within the global petrochemical industry. The key products are benzene, toluene and xylene (BTX). These are the raw materials for a number of the most important petrochemical intermediates and polymers.

Aromatics markets are complex to understand due to their close relationship to gasoline markets. Changes in aromatics markets are thus often not driven by supply/demand factors in the individual product markets, but by upstream developments in oil and feedstock markets. In addition, Asia's dominance of the C8 polyester chain adds a further geographic complication when trying to forecast likely developments in those business areas further down the value chain that depend on aromatics.

This course will give the participants deeper insights into different manufacturing aromatics processes. It will help participants to acquire a more detailed understanding of the various aromatics technologies, the varied applications of aromatics and their competing alternative valuations from a refinery.

Course Objectives

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

- Apply a comprehensive overview of the aromatics manufacturing process technology
- Describe the aromatic complex and distinguish the manufacturing process of benzene and paraxylene
- Identify the chemistry of aromatic compounds, extraction of aromatics, different processes used in the manufacture of different aromatics and feedstock selection
- Analyze the important functions of benzene, different manufacturing processes and carryout proven methods regarding economics, feedstock consideration, performance and equipment selection
- Recognize the importance and uses of the material, physical & chemical properties of the different types of xylenes and the economic important manufacturing processes that include economics, feedstock consideration, performance and equipment selection

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 aromatics manufacturing process technology for process engineers, operations process support engineers, cost engineers and other technical staff seeking a better understanding of the aromatics manufacturing process technology.

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.
Al Khobar	**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.
Abu Dhabi	**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.

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 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.

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, BSc, PMI-PMP, CSSBB, is a **Senior Process Engineer** with over **30 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 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 – 0930	***Aromatic Complex*** *Introduction ● Aromatic Compounds*
0930 - 0945	*Break*
0945 - 1100	***Aromatic Complex (cont'd)*** *Extraction of Aromatics*
1100 - 1215	***Aromatic Complex (cont'd)*** *Description of the Flow Process ● Feedstock Consideration*
1215 - 1230	*Break*
1230 - 1430	***Aromatic Complex (cont'd)*** *Configuration ● Case Study*
1430	*Lunch & End of Day One*

Day 2

0730 - 0930	***Benzene*** *Introduction ● Benzene Uses ● Benzene Production & Manufacturing Process*
0930 - 0945	*Break*
0945 - 1100	***Benzene (cont'd)*** *Catalytic Reforming ● Pyrolysis Gasoline*
1100 - 1215	***Benzene (cont'd)*** *Production from Coal Tar ● Toluene Hydrodealkylation ● Toluene Disproportionation*
1215 - 1230	*Break*
1230 - 1430	***Benzene (cont'd)*** *Selection of the Process ● Thermal Hydrodealkylation (THDA) Process - Process Description ● Process Economics*
1430	*Lunch & End of Day Two*

Day 3

0730 - 0930	***P-Xylene*** *Introduction to Xylenes and P-Xylene ● Xylenes Physical Properties ● Xylene Chemical Properties*
0930 - 0945	*Break*
0945 - 1100	***P-Xylene (cont'd)*** *Economic Environment for Para-xylene Producers ● UOP Aromatics Complex to Produce Para-xylene ● BP-UOP Cycler Process - Introduction*
1100 - 1215	***BP-UOP Cycler Process*** *BP-UOP Cycler Process – Process Chemistry ● Description of the Flow Process*
1215 - 1230	*Break*
1230 - 1430	***BP-UOP Cycler Process (cont'd)*** *Feedstock Consideration ● Process Performance ● Equipment Consideration*
1430	*Lunch & End of Day Three*

Day 4

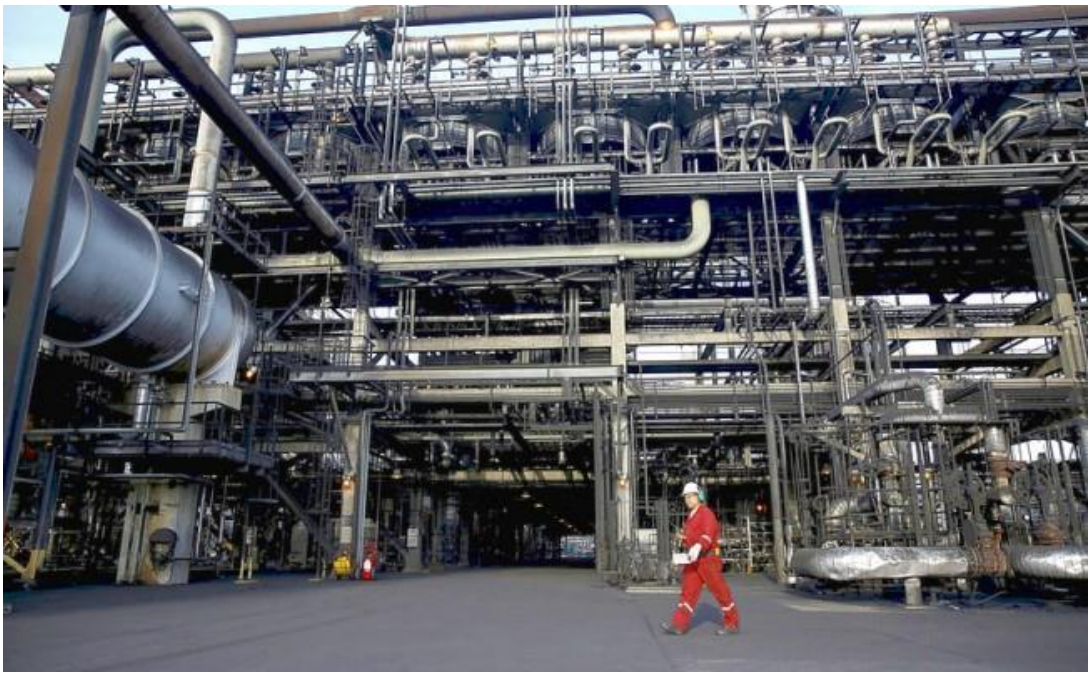
0730 - 0930	***UOP Isomer Process*** *Introduction ● Process Chemistry*
0930 - 0945	*Break*
0945 - 1100	***UOP Isomer Process (cont'd)*** *Description of the Flow Process ● Feedstock Consideration ● Process Performance*
1100 - 1215	***UOP Isomer Process (cont'd)*** *Process Performance ● Equipment Consideration*
1215 - 1230	*Break*
1230 - 1430	***UOP Parex Process*** *Introduction ● Parex vs. Crystallization*
1430	*Lunch & End of Day Four*

Day 5

0730 - 0930	***UOP Parex Process (cont'd)*** *Process Performance ● Feedstock Consideration ● Description of the Flow Process ● Equipment Consideration*
0930 - 0945	*Break*
0945 - 1100	***UOP TATORAY Process*** *Introduction ● Process Chemistry*
1100 - 1215	***UOP TATORAY Process (cont'd)*** *Description of the Flow Process ● Process Performance*
1215 - 1230	*Break*
1230 - 1400	***UOP TATORAY Process (cont'd)*** *Equipment Consideration*
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

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