COURSE OVERVIEW PE0340
HYSYS Steady State Process Simulation

Course Title
HYSYS Steady State Process Simulation

Course Date/Venue
Session 1: August 05-09, 2024/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
Session 2: November 11-15, 2024/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference
PE0340

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 our state-of-the-art simulators.

The course is designed to provide participants with a detailed and up-to-date overview on process simulation using HYSYS. It covers the nature and purpose of key gas processing operations; the major processes for dehydration, acid gas removal, NGL recovery and fractionation; the basic vocabulary unique to the industry and the key physical and chemical properties of natural gas constituents; the simulation basis manager and simulation environment; the wellhead, pipelines, separation and stabilization in gas plant operations; the use of glycol dehydration process; the gas sweetening with amines; the mechanical and JT refrigeration; and the modified lean oil plant, fractionation and turbo expander in gas processes.

The course presents an overview of the natural gas process simulation using Hysys, from the wellhead to the marketplace, with emphasis on gas plant process operations. The overall process flowsheet will be used to illustrate how the various operations are integrated into plants capable of handling diverse feeds from gas fields around the world. The key processes of dehydration, acid gas removal and hydrocarbon separation, including ethane and natural gas liquids (NGL) recovery, will be emphasized. Participants shall bring their Notebook computers and (if they can arrange it) a Hysys key as there will be an opportunity for participants to participate in process simulation.

Course Objectives

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

- Apply and gain an in-depth knowledge on process simulation using Hysys
- Recognize the nature and purpose of key gas processing operations
- Describe the major processes for dehydration, acid gas removal, NGL recovery and fractionation
- Explain the basic vocabulary unique to the industry and the key physical and chemical properties of natural gas constituents
- Identify simulation basis manager and simulation environment including buttons and object palette and printing
- Discuss wellhead, pipelines, separation and stabilization in gas plant operations and use glycol dehydration process as well as gas sweetening with amines
- Differentiate between mechanical and JT refrigeration
- Demonstrate modified lean oil plant, fractionation and turbo expander in gas processes

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 is intended for those directly involved in gas processing operations will find the course particularly relevant. However, the course is specifically designed to be of benefit to both technical and non-technical personnel employed in the activities that support the industry. Managers, engineers, marketing staff, and manufacturer's representatives, as well as individuals involved in sales and services to the natural gas industry will receive considerable benefit from the overview.

Course Fee

F2F Classroom: **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.

Virtual Training (If Applicable)

If this course is delivered online as a Virtual Training, the following limitations will be applicable:-

Certificates	Only soft copy certificates will be issued to participants through Haward's Portal. This includes Wallet Card Certificates if applicable
Training Materials	Only soft copy Training Materials (PDF format) will be issued to participant through the Virtual Training Platform
Training Methodology	80% of the program will be theory and 20% will be practical sessions, exercises, case studies, simulators or videos
Training Program	The training will be for 4 hours per day starting at 0930 and ending at 1330
H-STK Smart Training Kit	Not Applicable
Hands-on Practical Workshops	Not Applicable
Site Visit	Not Applicable
Simulators	Only software simulators will be used in the virtual courses. Hardware simulators are not applicable and will not be used in Virtual Training

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. Manuel Dalas, PEng, MSc, BSc, is a **Senior Process Engineer** and **Management Consultant** with over **25 years** of industrial experience within the **Oil & Gas**, **Refinery**, **Petrochemical** and **Refinery** industries. His expertise widely includes in the areas of **Crude Distillation Process**, **Saturation Gas Process** Technology, **Glycol Dehydration, Gas Sweetening, Crude Dehydration & Desalting**, **Turbo Expander, Crude** Stabilization Operations, **Process Plant** Performance & Efficiency, **Heat Exchangers & Fired Heaters** Operation & Troubleshooting, **Process Plant** Optimization, **Revamping & Debottlenecking**, **Process Plant** Troubleshooting & Engineering Problem Solving, **Mass & Material Balance**, **Oil & Gas** Processing, **Oil Field** Operation, **Process Plant** Operation & Troubleshooting, **Hydrogen Sulphide Stripping**, **Modified Lean Oil Plant, Crude Oil De Salting** Process, **Gas Conditioning**, **NGL Recovery & NGL Fractionation**, **Flare** Systems, Pre-Fabrication of **Steel Structure**, Alloy Piping Pre-Fabrication, **Heat Exchangers**, **Vertical Columns/Pressure Vessels**, **Distillation Column**, **Steel Structures**, **Pressure Vessels** Maintenance & Operation, **Piping Support**, **Ironworks**, **Rotating & Static Equipment** (**Pumps**, **Valves**, **Boilers**, **Pressure Vessels**, **Tanks**, **Heat Exchangers**, **Bearings**, **Compressors**, **Pipelines**, **Motors**, **Turbines**, **Gears**, **Seals**), **Construction** Management, **Building** Structures and **Electrical-Mechanical Equipments**. Further, he is also well-versed in **Risk** Management, **Risk Analysis** & Decision Making in Petroleum Exploration, **Risk Assessments**, Methods Statements and Quality Plans, **Petroleum Economics**, **Maintenance Planning & Scheduling**, **Maintenance & Reliability Management**, **Process Piping**, **Vibration Monitoring**, **Safety Relief Valve**, **Hydraulic**, **Heat Exchanger**, **Process Plant Start-Up**, **Commissioning & Troubleshooting**, **Process Plant Performance & Efficiency**, **Process Plant Optimization**, **Revamping & Debottlenecking**, **Hydrogen Sulfide** and **Flare Systems**. Currently, he is the **Technical Consultant** of the **Association of Local Authorities of Greater Thessaloniki** where he is in charge of the mechanical engineering services for piping, pressure vessels fabrications and ironwork.

During his career life, Mr. Dalas has gained his practical and field experience through his various significant positions and dedication as the **Technical Manager**, **Construction Manager**, **Project Engineer**, **Production Engineer**, **Construction Engineer**, **Consultant Engineer**, **Technical Consultant**, **Safety Engineer**, **Mechanical Engineer**, **External Collaborator**, **Deputy Officer** for various companies including the Alpha Astika, Anamorfosis Technical Firm, EKME, ASTE, Elof Consulting and Hypergroup.

Mr. Dalas is a **Registered Professional Engineer** and has a **Master's** degree in **Energy System** from the **International Hellenic University** and a **Bachelor's** degree in **Mechanical Engineering** from the **Mechanical Engineering Technical University**, **Greece** along with a **Diploma** in **Management & Production Engineering** from the **Technical University** of **Crete**. Further, he is a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership and Management** (**ILM**), a **Certified Project Manager Professional** (**PMI-PMP**), a **Certified Instructor/Trainer**, a **Certified Energy Auditor** for **Buildings**, **Heating & Climate Systems**, a **Member** of the **Hellenic Valuation Institute** and the **Association of Greek Valuers** and a **Licensed Expert Valuer Consultant** of the **Ministry of Development and Competitiveness**. He has further delivered numerous trainings, courses, seminars, conferences and workshops 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*
0815 - 0830	***PRE-TEST***
0830 - 0930	***Getting Started***
0930 - 0945	*Break*
0945 - 1045	***Simulation Basis Manager***
1045 - 1145	***Simulation Environment (Buttons, Object Palette)***
1145 - 1230	***Printing***
1230 - 1245	*Break*
1245 - 1420	***Case Study***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 - 0930	***Wellhead/Pipeline/Separation/Stabilization***
0930 – 0945	*Break*
0945 - 1100	***Glycol Dehydration***
1100 - 1215	***Gas Sweetening with Amines***
1215 - 1230	*Break*
1230 - 1420	***Case Study***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 - 0930	***Gas Sweetening with Amines (cont'd)***
0930 – 0945	*Break*
0945 - 1100	***Mechanical Refrigeration***
1100 - 1215	***Mechanical Refrigeration (cont'd)***
1215 - 1230	*Break*
1230 - 1420	***Case Study***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

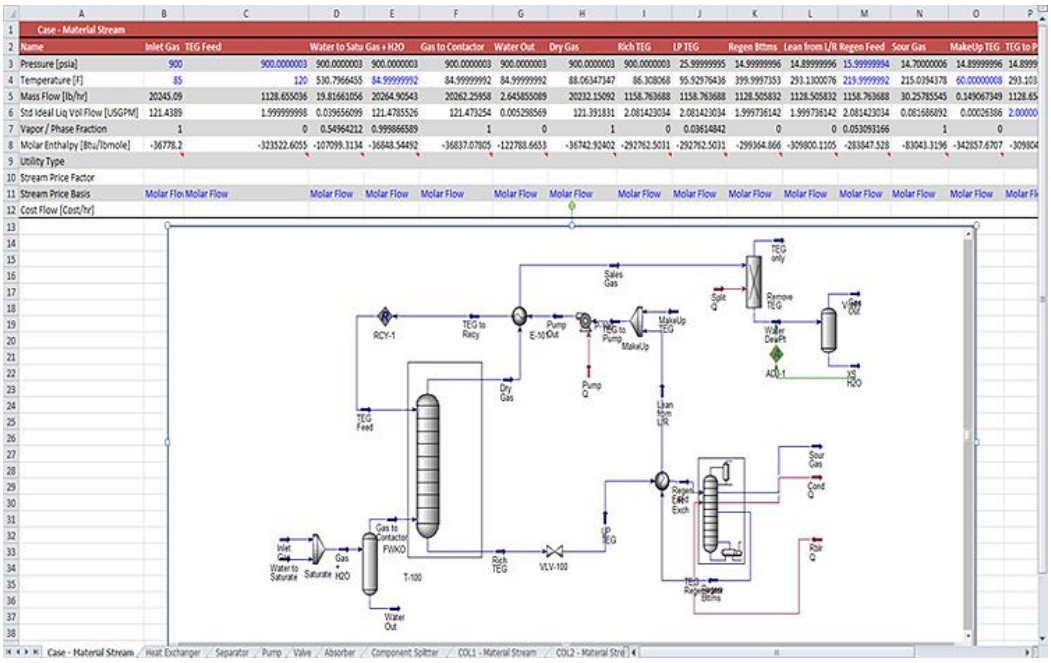
0730 - 0930	***JT Refrigeration***
0930 – 0945	*Break*
0945 - 1100	***JT Refrigeration (cont'd)***
1100 - 1215	***Modified Lean Oil Plant***
1215 - 1230	*Break*
1230 - 1420	***Case Study***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

0730 - 0930	***Modified Lean Oil Plant (cont'd)***
0930 – 0945	*Break*
0945 - 1100	***Fractionation***
1100 - 1215	***Turbo Expander***
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*

Simulator (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 the simulator "HYSYS".



HYSYS Simulator

Course Coordinator

Mari Nakintu, Tel: +971 2 30 91 714, Email: mari1@haward.org