

COURSE OVERVIEW PE0727

Plant Facilities Control Systems for Process Equipment – Operations

Course Title

Plant Facilities Control Systems for Process Equipment – Operations

Course Date/Venue

Session 1: February 24-28, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Session 2: August 17-21, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE



Course Reference

PE0727



Course Duration/Credits

Five days/3.0CEUs/30 PDHS

Course Description



This hands-on, highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using the process equipment simulators.

This course is designed to provide the delegates with a comprehensive and up-to-date overview of the equipment used in the petroleum production facilities (surface facilities).



The course covers both rotating and static equipment including compressors, pumps, gas turbines, wellheads, well test equipments, storage tanks, heat exchangers and recovery equipments. It will also introduce separators, columns, slug catchers, flare drums and drain pumps.

The following topics will be discussed for each equipment: codes & standards; operating common problems & troubleshooting; isolation & de-isolation procedures & guidelines; protection systems and the performance evaluation tests including the performance curves for rotating equipment.



The course will enable participants to develop a 'feel' for the important parameters of operating the equipment of production facility. The participants will understand the uncertainties and assumptions inherent in using such equipment and the limitations, advantages and disadvantages associated with their use.

Course Objectives

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

- Apply and gain an up-to-date knowledge on surface facilities equipment
- Provide all the requires background knowledge that needed by the candidates to perform the actual operational tasks for handling plant/equipment in sites safely and effectively
- Discuss the petroleum production facility covering the facility description, making the equipment work, facility types, composition of petroleum, petroleum processing, hydrocarbon properties and characterization parameters and definitions
- Identify facility equipment that includes rotating equipment and static equipment as well as the common problems for each equipment
- Recognize the internals of each equipment and the protection system in each equipment
- Utilize each equipment operating manual/procedure and P&IDs
- Prepare equipment for internal inspection/maintenance and evaluate equipment performance
- Implement the codes and standards of rotating and static equipment
- Operate common problems and troubleshooting as well as isolate and de-isolate procedures and guidelines
- Employ protection systems and performance evaluation tests
- Carryout performance curves of rotating equipment

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 operation of process equipment in oil/gas surface facilities for employees from the operating companies in the oil and gas industry. This includes engineers and other technical staff.

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: -

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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 Fee

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.

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. Hany Ghazal, BSc, is a Senior Process Engineer with over 35 years Practical experience and 20 years Teaching experience within the Oil & Gas, Hydrocarbon and Petrochemical industries. His expertise widely covers the areas of Process Plant Operations, Process Plant Troubleshooting & Engineering Problem Solving, Safety & Pollution Control, Water Injection, Corrosion Monitoring & Corrosion Mitigation, Safety And Control Pollution, Drilling, Maintenance, Production, Process, Equipment Maintenance Program, Engineering Drawing Screening, Surface Production Facilities, Infrastructure Integrity Assurance, Emergency Response Team, Safety Awareness, Advanced Safety Auditing, HAZOP, Integrity Management Rolling Plan, Gas Wells Production, Reservoir Management, Marine Services, Production, Pumping, Transportation, Processing, Storage, Shipping, Facilities Change Process, Training & Implementation, Capital & Expense Budgets, Managing Expenditures, General Performance, Tendering Process, Prepare Bid Packages, Technical & Commercial Evaluation, Tendering Process, Training Course Implementation, Documents, Production Daily Reports And Business Plan.

During his career life, Mr. Ghazal has gained his practical and field experience through his various significant positions and dedication as the **Training Instructor & Consultant, Chairman & Managing Director, Operation General Manager & Board Member, Field Operation Gen. Manager, Facilities Assistance General Manager, Environment and Corrosion Department Head and Operations Engineer (Water Injection Plants) for Cairo University and Britch University, Joint ventures companies in the Egyptian oil & Gas sector, Natural gas production Company in The Egyptian Oil & Gas Sector Established and Ras Shukeir Oil Fields (GUPCO).**

Mr. Hany Ghazal has a Bachelor's Degree of Chemical Engineering. Further, he is 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 - 0745	Registration & Coffee
0745 - 0800	Welcome & Introduction
0800 - 0815	PRE-TEST
0815 - 0930	The Petroleum Production Facility <i>Facility Description • Making the Equipment Work • Facility Types • Composition of Petroleum • Petroleum Processing: An Overview • Hydrocarbon Properties: (Pure Hydrocarbons, Defined Mixtures, Undefined Mixtures) • Characterization Parameters & Definitions</i>

0930 - 0945	<i>Break</i>
0945 - 1045	Overview of Facility Equipment <i>Rotating Equipment • Static Equipment</i>
1045 - 1215	Compressors <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines</i>
1215 - 1230	<i>Break</i>
1230 - 1420	Compressors (cont'd) <i>Protection Systems • Performance Evaluation Tests • Performance Curves</i>
1420 - 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 - 0930	Pumps <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines</i>
0930 - 0945	<i>Break</i>
0945 - 1045	Pumps (cont'd) <i>Protection Systems • Performance Evaluation Tests • Performance Curves</i>
1045 - 1215	Gas Turbines <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines</i>
1215 - 1230	<i>Break</i>
1230 - 1420	Gas Turbines (cont'd) <i>Protection Systems • Performance Evaluation Tests • Performance Curves</i>
1420 - 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 - 0930	Wellheads <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines</i>
0930 - 0945	<i>Break</i>
0945 - 1045	Wellheads (cont'd) <i>Protection Systems • Performance Evaluation Tests</i>
1045 - 1215	Well Test Equipment <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines</i>
1215 - 1230	<i>Break</i>
1230 - 1420	Well Test Equipment (cont'd) <i>Protection Systems • Performance Evaluation Tests</i>
1420 - 1430	Recap
1430	<i>Lunch & End of Day Three</i>

Day 4

0730 - 0930	Storage Tanks <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines</i>
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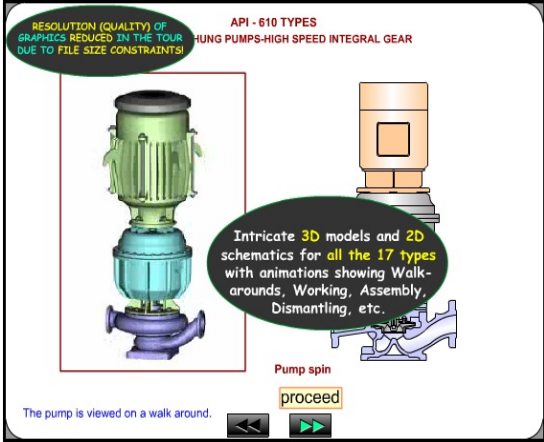
0930 - 0945	<i>Break</i>
0945 - 1045	Storage Tanks (cont'd) <i>Protection Systems • Performance Evaluation Tests</i>
1045 - 1215	Heat Exchangers & Recovery Equipment <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines</i>
1215 - 1230	<i>Break</i>
1230 - 1420	Heat Exchangers & Recovery Equipment (cont'd) <i>Protection Systems • Performance Evaluation Tests</i>
1420 - 1430	Recap
1430	<i>Lunch & End of Day Four</i>

Day 5

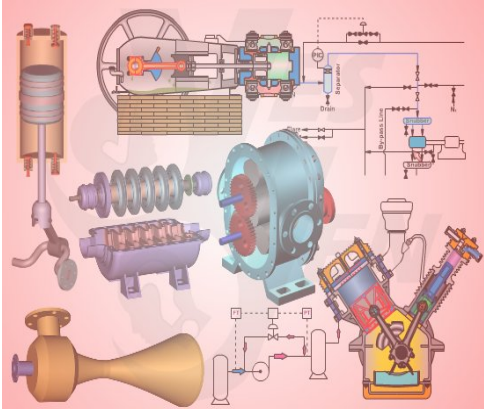
0730 - 0830	Separators <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines • Protection Systems • Performance Evaluation Tests</i>
0830 - 0930	Columns <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines • Protection Systems • Performance Evaluation Tests</i>
0930 - 0945	<i>Break</i>
0945 - 1045	Slug Catchers <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines • Protection Systems • Performance Evaluation Tests</i>
1045 - 1215	Flare Drums <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines • Protection Systems • Performance Evaluation Tests</i>
1215 - 1230	<i>Break</i>
1230 - 1345	Drain Pumps <i>Codes & Standards • Operating Common Problems & Troubleshooting • Isolation & De-Isolation Procedures & Guidelines • Protection Systems • Performance Evaluation Tests</i>
1345 - 1400	Course Conclusion
1400 - 1415	POST-TEST
1415 - 1430	<i>Presentation of Course Certificates</i>
1430	<i>Lunch & End of Course</i>

Simulator (Hands-on Practical Sessions)

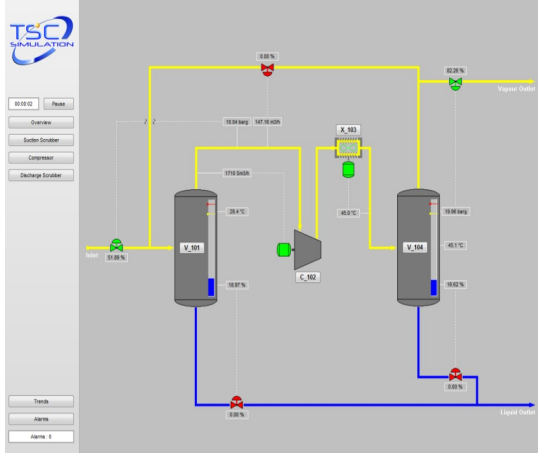
Practical session will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the “Centrifugal Pumps and Troubleshooting Guide 3.0”, “CBT on Compressors”, “SIM 3300 Centrifugal Compressor Simulator”, “Single Shaft Gas Turbine Simulator”, “Two Shaft Gas Turbine Simulator” and “Heat Exchanger Tube Layout” simulators.



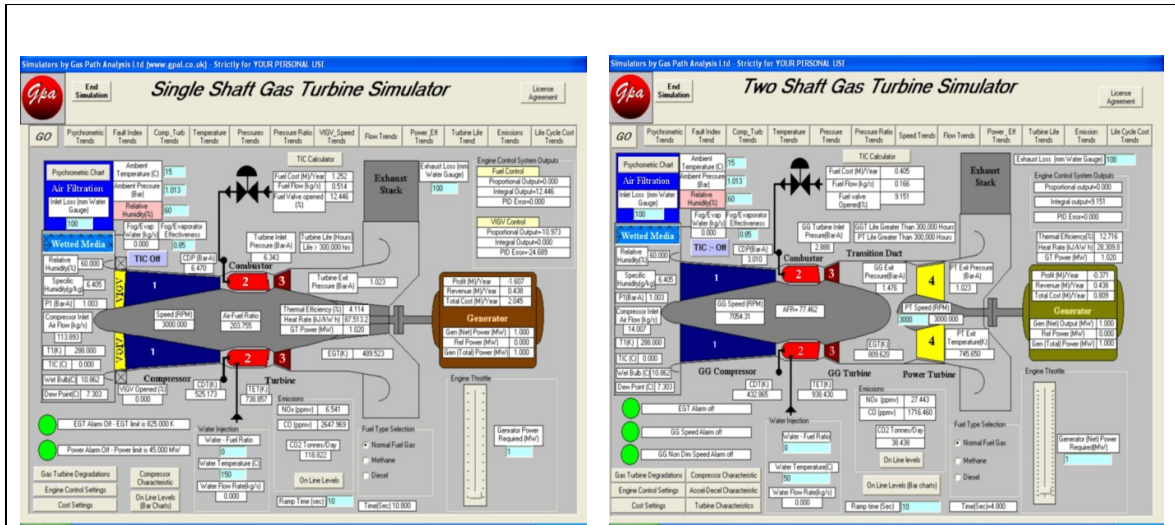
Centrifugal Pumps and Troubleshooting Guide 3.0



CBT on Compressors

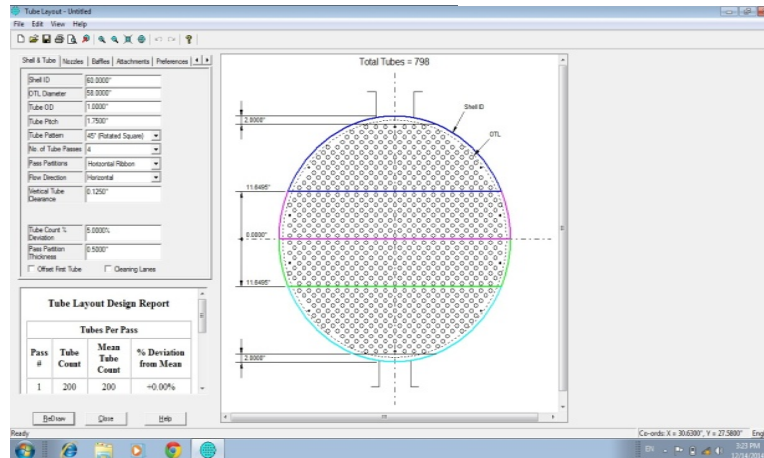


SIM 3300 Centrifugal Compressor Simulator



Single Shaft Gas Turbine Simulator

Two Shaft Gas Turbine Simulator



Heat Exchanger Tube Layout

Course Coordinator

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