

COURSE OVERVIEW ME0533
Ebara Pumps

Course Title
 Ebara Pumps

Course Date/Venue
 October 06-10, 2024/ Boardroom 1, Elite Byblos
 Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference
 ME0533

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



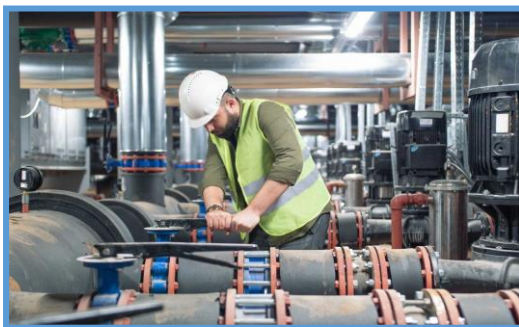
Course Description



This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.



This course is designed to provide participants with a detailed and up-to-date overview of Ebara Pumps. It covers the basic principles and fundamentals of pump operation including centrifugal and positive displacement pumps; the various types of Ebara pumps comprising of submersible, centrifugal and multistage pumps; the key components of Ebara pumps covering impellers, casing, seals and bearings; the criteria for selecting the right Ebara pump for specific applications; and the flow rate, head, pump efficiency and NPSH requirements.



Further, the course will also discuss the reading and interpretation of Ebara pump performance curves to match pump capabilities with system requirements; the site preparation, alignment and piping configurations; the commissioning procedures, initial start-up, performance verification and operational adjustments; the key operating parameters for Ebara pumps including pressure, temperature and flow control; the strategies for optimizing the energy efficiency of Ebara pump operations; developing a preventive maintenance schedule; and identifying and addressing the common operational issues.

During this interactive course, participants will learn the routine maintenance practices and advanced troubleshooting techniques; the spare parts management and wear and tear analysis; the criteria for deciding whether to repair or replace parts or entire Ebara pump units; the specialized Ebara pump applications, material selection, corrosion resistance, smart pumps and automation; the sustainability and environmental considerations; the emerging technology in pumping system; the system integration, project planning and management; and the compliance and standards.

Course Objectives

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

- Apply and gain an in-depth knowledge of Ebara pumps
- Discuss the basic principles and fundamentals of pump operation, including centrifugal and positive displacement pumps
- Identify the various types of Ebara pumps, covering submersible, centrifugal and multistage pumps and their applications
- Recognize the key components of Ebara pumps comprising of impellers, casing, seals and bearings
- Apply the criteria for selecting the right Ebara pump for specific applications including flow rate, head, pump efficiency and NPSH requirements
- Read and interpret Ebara pump performance curves to match pump capabilities with system requirements
- Carryout site preparation, alignment and piping configurations as well as commissioning procedures covering initial start-up, performance verification and operational adjustments
- Discuss the key operating parameters for Ebara pumps, including pressure, temperature and flow control
- Employ strategies for optimizing the energy efficiency of Ebara pump operations and develop a preventive maintenance schedule
- Identify and address the common operational issues and apply routine maintenance practices and advanced troubleshooting techniques
- Apply spare parts management and wear and tear analysis as well as discuss the criteria for deciding whether to repair or replace parts or entire Ebara pump units
- Determine specialized Ebara pump applications, material selection, corrosion resistance, smart pumps and automation
- Discuss sustainability and environmental considerations and the emerging technology in pumping systems
- Apply system integration, project planning and management as well as compliance and standards

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 Ebara pumps for pump engineers, maintenance technicians, pump operators, procurement managers and water and waste professionals.

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 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 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. Karl Thanasis, PEng, MSc, MBA, BSc, is a **Senior Mechanical & Energy Expert** with over **45 years** of practical experience within the **Energy Sectors**. His wide expertise includes **Energy Management International Standards, Energy Audit, Energy Efficiency, Industrial Energy Efficiency, Energy Efficiency & Management, Nuclear Power Plant, Renewable Energy, Solar Energy, Thermal Energy, Engineering Drawings, Codes & Standards, P&ID**

Reading, Interpretation & Developing, Drawing Interpretation, Oil & Gas Field Commissioning, Start-Up & Troubleshooting, Oil Field Operations & Water Treatment, Process Plant Performance & Efficiency, Water Testing, Wastewater Treatment Technology, Industrial Water Treatment in Refineries & Petrochemical Plants, Piping System, Water Movement, Water Filtering, Mud Pumping, Sludge Treatment and Drying, Aerobic Process of Water Treatment that includes Aeration, Sedimentation and Chlorination Tanks. His strong background also includes **Pump Operation & Maintenance, Pumps, Turbo-Generator, Turbine Shaft Alignment, Mud Pumping, Sludge Pumps, Filters, Metering Pumps, Steam Turbines, Power Generator Plants, Gas Turbines, Turbine Shaft Alignment, Root Cause Failure Analysis (RCFA), Boilers, Process Fired Heaters, Heater Fabrication, Thermal & Fired Heater Design, Heat Exchangers, Heat Transfer, Coolers, Boiler & Steam System Management, Chiller & Chiller Plant Design & Installation, Pressure Vessel, Safety Relief Valve Sizing & Selection, Valve Disassembling & Repair, Pressure Relief Devices (PSV), Hydraulic & Pneumatic Maintenance, Advanced Valve Technology, Design and Sizing of all Waste Water Treatment Plant Associated Equipment such as Sludge Pumps, Filters, Metering Pumps, Aerators and Sludge Decanters.**

Mr. Thanasis has acquired his thorough and practical experience as the **Project Manager, Plant Manager, Area Manager - Equipment Construction, Construction Superintendent, Project Engineer and Design Engineer.** His duties covered **Plant Preliminary Design, Plant Operation, Write-up of Capital Proposal, Investment Approval, Bid Evaluation, Technical Contract Write-up, Construction and Sub-contractor Follow up, Lab Analysis, Sludge Drying and Management of Sludge Odor and Removal.** He has worked in various companies worldwide in the **USA, Germany, England and Greece.**

Mr. Thanasis is a **Registered Professional Engineer** in the **USA and Greece** and has **Master and Bachelor** degrees in **Mechanical Engineering with Honours** from the **Purdue University and SIU in USA** respectively as well as an **MBA** from the **University of Phoenix in USA.** Further, he is a **Certified Instructor/Trainer.**

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: Sunday 06th of October 2024

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Basic Pump Principles Fundamentals of Pump Operation, including Centrifugal & Positive Displacement Pumps, & Where Ebara Pumps Fit within these Categories
0930 – 0945	Break
0945 – 1100	Types of Ebara Pumps: The Various Types of Ebara Pumps, including Submersible, Centrifugal, & Multistage Pumps, & Their Applications
1100 – 1215	Pump Components & Design: The Key Components of Ebara Pumps, including Impellers, Casings, Seals, & Bearings
1215 – 1230	Break
1230 – 1330	Pump Selection Criteria: Criteria for Selecting the Right Ebara Pump for Specific Applications, including Flow Rate, Head, Pump Efficiency, & NPSH Requirements
1330 – 1420	Reading Pump Curves: How to Read & Interpret Ebara Pump Performance Curves to Match Pump Capabilities with System Requirements
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2: Monday 07th of October 2024

0730 – 0830	Installation Requirements Best Practices for the Installation of Ebara Pumps, including Site Preparation, Alignment & Piping Configurations
0830-0930	Commissioning Procedures: Steps for the Successful Commissioning of Ebara Pumps, including Initial Start-Up, Performance Verification, & Operational Adjustments
0930 – 0945	Break
0945 – 1100	Operating Parameters: Key Operating Parameters for Ebara Pumps, including Pressure, Temperature, & Flow Control
1100 – 1215	Energy Efficiency & Optimization: Strategies for Optimizing the Energy Efficiency of Ebara Pump Operations, including Variable Frequency Drives (VFDs) & Pump Speed Adjustments
1215 – 1230	Break
1230 – 1340	Preventive Maintenance: Developing a Preventive Maintenance Schedule for Ebara Pumps to Ensure Reliability & Extend Service Life
1340 – 1420	Common Operational Issues: Identifying & Addressing Common Operational Issues, such as Cavitation, Vibration & Seal Failures
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3: Tuesday 08th of October 2024

0730 – 0830	Routine Maintenance Practices: Routine Maintenance Tasks, such as Lubrication, Seal Replacement, & Impeller Adjustment
0830-0930	Advanced Troubleshooting Techniques: Systematic Troubleshooting Techniques for Diagnosing & Resolving Complex Issues with Ebara Pumps
0930 – 0945	Break



0945 – 1100	Spare Parts Management: Effective Management of Spare Parts Inventory, including Critical Spares & Lead-Time Considerations for Ebara Pumps
1100 – 1215	Wear & Tear Analysis: Identifying Signs of Wear & Tear in Pump Components & Determining the Appropriate Course of Action
1215 – 1230	Break
1230 – 1330	Repair Versus Replace Decisions: Criteria for Deciding Whether to Repair or Replace Parts or Entire Ebara Pump Units
1330 – 1420	Case Studies: Analysis of Real-World Maintenance & Troubleshooting Scenarios Involving Ebara Pumps
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4: Wednesday 09th of October 2024

0730 – 0830	Specialized Ebara Pump Applications: Specialized Applications for Ebara Pumps, including Wastewater Treatment, Boiler Feed Water, & Chemical Processing
0830-0930	Material Selection & Corrosion Resistance: The Importance of Material Selection in Ebara Pumps to Resist Corrosion & Wear in Challenging Environments
0930 – 0945	Break
0945 – 1100	Smart Pumps & Automation: Smart Pump Technologies & Automation Solutions Offered by Ebara, Including Sensors & Monitoring Systems
1100 – 1215	Sustainability & Environmental Considerations: The Sustainability Features of Ebara Pumps, including Energy-Saving Designs & Materials
1215 – 1230	Break
1230 – 1330	Emerging Technologies in Pumping Systems: Emerging Technologies & Trends in the Pumping Industry & Their Implications for Ebara Pump Users
1330 – 1420	System Integration: Best Practices for Integrating Ebara Pumps into Larger Systems, including Compatibility with Existing Infrastructure & Controls
1420 – 1430	Recap
1430	Lunch & End of Day Four

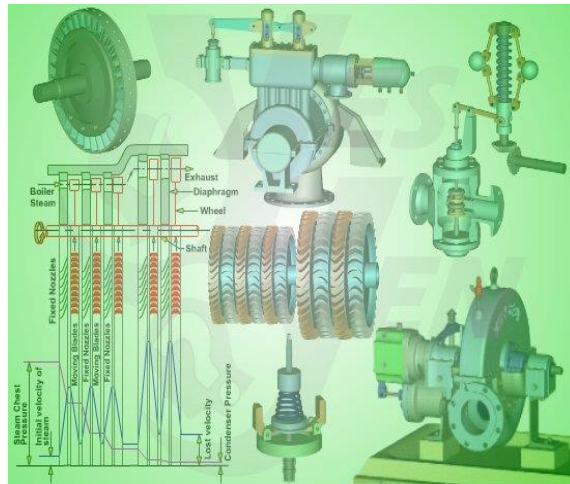
Day 5: Thursday 10th of October 2024

0730 – 0915	Project Planning & Management: Key Considerations for Planning & Managing Projects Involving the Installation or Upgrade of Ebara Pump Systems
0915 – 0930	Compliance & Standards: Overview of Industry Standards & Compliance Requirements Relevant to Ebara Pumps, Including ISO & ANSI Standards
0930 – 0945	Break
0945 – 1100	Training & Development: Resources & Opportunities for Ongoing Training & Development for Personnel Working with Ebara Pumps
1100 – 1215	Future Trends in Pumping Technology: The Future of Pumping Technology, including Potential Advancements in Materials, Designs, & Control Systems
1215 – 1230	Break
1230 – 1345	Ebara’s Role in the Future of Pumping Solutions How Ebara is Positioning Itself to Meet Future Challenges & Opportunities in the Pumping Industry
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

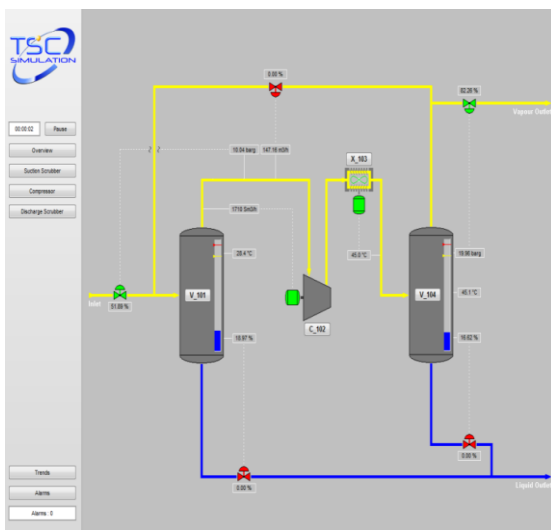


Simulator (Hands-on Practical Sessions)

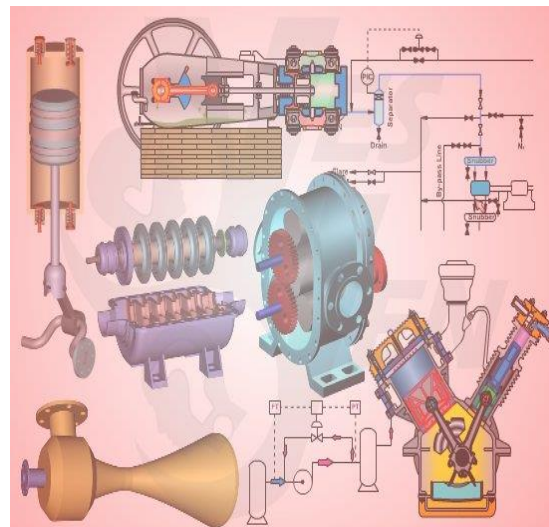
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the simulators “Steam Turbines & Governing System CBT”, “SIM 3300 Centrifugal Compressor” and “CBT on Compressors”.



Steam Turbines & Governing System CBT



SIM 3300 Centrifugal Compressor Simulator



CBT on Compressors

Course Coordinator

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