COURSE OVERVIEW ME0100
Modern Valve Technology
Selection, Installation, Upgrading, Inspection, Maintenance, Repair & Troubleshooting

Course Title
Modern Valve Technology: *Selection, Installation, Upgrading, Inspection, Maintenance, Repair & Troubleshooting*

Course Reference
ME0100

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

Course Date/Venue

Session(s)	Date	Venue
1	February 04-08, 2024	Kizkulesi, Crown Plaza Istanbul Asia Hotels & Convention Center, Istanbul, Turkey
2	March 03-07, 2024	The Mouna Meeting Room, The H Dubai Hotel, Sheikh Zayed Rd - Trade Centre, Dubai, UAE

Course Description

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

This course has been structured to show how more than 32 basic types of valves operate and how they are configured for their many applications. With over 400 classifications for valves produced by more than two thousand manufacturing companies, which valve do you select? It will be shown how valves should be specified and selected. The course will present many accessories such as actuators and how they are made available and selected. Other amenities such as proportional controllers, solenoids, positioners and indicators etc will also be presented.

In light of the many liability cases held throughout the world, selecting the proper valve can have major consequences for a company's safety, economy and viability. With this in mind, the program is designed to give both the new and experienced user some insight to problems that valve designers and manufacturing facilities encounter in the real world. Guidelines and numerous "rule of thumb" suggestions will be given to help you make sound choices that limit downtime.

In today's ever-changing environment, the specifier and valve buyer will spend 67% to 80% of their time looking up information. This results in your time being non-productive. The course will show you how to circumvent this problem. Industry needs to select the best Valve with the quality it requires in a timely and economical manner. This course presents a practical approach to valve selection for the function, Servicing, sizing, installation, repair, overhaul, upgrading and modifications of these components.

Valves usually appear to be simple in form and operation, such as those of a manual off/on valve, check valve, or the fixed valve type such as an orifice, blind, etc. You will discover that even these components are frequently installed improperly throughout the industry. You will learn how components such as safety and relief valves can become highly complicated and dangerous. The consequences of not understanding their basic design will be shown. Many control valves and regulators are so complex that they are complete systems within themselves. Resolving problems associated with them can challenge the best engineer, scientist or technician. The course director will explain why this happens in detail.

The course is constructed for three different groups, i.e., valve selection & specification, valve manufacturing & maintenance, and valve design & application theory, it is always difficult to meet all the objectives of anyone group due to the diverse and completely different backgrounds in both education and experience. However, this program has been developed over the years to instruct all three groups at the same time. This is accomplished by integrating the fundamentals of the three groups to show the participant, how each discipline plays an important role for those who specify, select, purchase, design and manufacture and repair these many different types of valves.

Course Objectives

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

- Demonstrate and apply good working knowledge on the selection, installation, upgrading, inspection, maintenance, repair and troubleshooting of valves
- Interpret the economics based upon valve marketing and valve selection
- Evaluate valve emissions and energy conservation concepts and apply the acceptance procedures for in-house valve testing and verifications
- Apply proper steps, techniques and practices related to the maintenance, repair, sizing and selection of valves, actuators and regulators
- Apply the principles of pressure, temperature, flow and fluid mechanics on the design and use of valves

Who Should Attend

This course provides an overview of all significant aspects and considerations of valve for those who are involved in the selection, installation, upgrading, inspection, repair and troubleshooting of various types of valves. Maintenance engineers, application engineers, inspection engineers, mechanical engineers, under-development engineers, electrical/electronics engineers, control systems and instrumentation engineers, production engineers, wellhead and drilling engineers and new valve designers will acquire an excellent knowledge from the practical approach of the course. Further, supervisors, foremen and other technical staff will gain a good working skills from the operational aspects of the course. Distributors, sales engineers or buyer of this equipment will also benefit as they will understand much of the design and manufacturing principles that dictates faster delivery of safer quality product.

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.

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. Dimitry Rovas, CEng, MSc, PMI-PMP, SMRP-CMRP is a **Senior Mechanical & Maintenance Engineer** with extensive industrial experience in **Oil**, **Gas**, **Power** and **Utilities** industries. His expertise includes **Boiler** Inspection & Maintenance, **Boiler** Systems, **Boiler** instrumentation & Controls, **Boiler** Start-up & Shutdown, **Boiler** Operation & Steam System Management, **Boiler** Water Chemistry & Treatment, **Boiler** Efficiency & Waste Heat Recovery, **Boiler** Inspection & Testing, **Boiler** Maintenance, **Boiler** Troubleshooting & Safety, **Boiler** Emissions & Pollution Control, **Combustion** Analysis & Tuning Procedures, **Water Treatment** Technology, Heat Recovery Steam Generating (**HRSG**), **Impulse Tube** Installation & Inspection, **Parker Compression Fittings**, **Pipes & Fittings**, **PSV Inspection**, **Root Cause Failure Analysis**, **Tank** Design & Engineering, **Tank Shell**, **Tanks & Tank Farms**, **Vacuum Tanks**, **Gas Turbine** Operating & Maintenance, **Diesel Engine**, **Engine Cycles**, **Governors & Maintenance**, **Crankshafts** & Maintenance, **Lubrication** System Troubleshooting & Maintenance, **Engines/Drivers**, **Motor** Failure Analysis & Testing, **Motor** Predictive Maintenance, **Engine** Construction & Maintenance, **HP Fuel Pumps & Maintenance**, **Fired Equipment** Maintenance, Combustion **Techniques**, **Process Heaters**, Glass Reinforced Epoxy (**GRE**), Glass Reinforced Pipes (**GRP**), Glass Reinforced Vent (**GRV**), **Mechanical Pipe Fittings**, **Flange Joint Assembly**, Adhesive Bond Lamination, **Butt Jointing**, **Joint & Spool Production**, **Isometric Drawings**, **Flange Assembly** Method, **Fabrication & Jointing**, Jointing & Spool Fabrication, **CAESAR**, **Pipe Stress Analysis**, **Pipe Cuttings**, **Flange Bolt Tightening** Sequence, **Hydro Testing**, **Pump** Technology, Fundamentals of **Pumps**, **Pump** Selection & Installation, **Centrifugal Pumps & Troubleshooting**, **Reciprocating & Centrifugal Compressors**, **Screw Compressor**, **Compressor** Control & Protection, **Gas & Steam Turbines**, **Turbine** Operations, **Gas Turbine** Technology, **Valves**, **Process Control Valves**, **Bearings & Lubrication**, Advanced **Machinery Dynamics**, **Rubber Compounding**, **Elastomers**, **Thermoplastic**, **Industrial Rubber Products**, **Rubber** Manufacturing Systems, **Heat Transfer**, **Vulcanization Methods**, **Process Plant Shutdown & Turnaround**, **Professional Maintenance Planner**, Advanced **Maintenance Management**, **Maintenance Optimization & Best Practices**, **Maintenance Auditing & Benchmarking**, **Material Cataloguing**, **Reliability** Management, **Rotating Equipment**, **Energy Conservation**, **Energy Loss Management** in Electricity Distribution Systems, **Energy Saving**, **Thermal Power Plant** Management, **Thermal Power Plant** Operation & Maintenance, **Heat Transfer**, **Machine Design**, **Fluid Mechanics**, **Heating & Cooling Systems**, **Heat Insulation Systems**, **Heat Exchanger & Cooling Towers**, **Mechanical Erection**, **Heavy Rotating Equipment**, Material Unloading & Storage, Commissioning & Start-Up. He is currently the **Project Manager** wherein he is managing, directing and controlling all activities and functions associated with the domestic heating/cooling facilities projects.

During his life career, Mr. Rovas has gained his practical and field experience through his various significant positions and dedication as the **EPC Project Manager**, **Field Engineer**, **Mechanical Engineer**, **Preventive Maintenance Engineer**, **Researcher**, **Instructor/Trainer**, **Telecom Consultant** and **Consultant** from various companies such as the Podaras Engineering Studies, Metka and Diadikasia, S.A., **Hellenic Petroleum Oil Refinery** and COSMOTE.

Mr. Rovas has **Master's** degrees in **Energy Production & Management** and **Mechanical Engineering** from the **National Technical University of Athens** (**NTUA**), **Greece**. Further, he is a **Certified Instructor/Trainer**, a **Certified Maintenance and Reliability Professional** (**CMRP**) from the Society of Maintenance & Reliability Professionals (**SMRP**), **Certified Project Management Professional** (**PMI-PMP**), **Certified Six Sigma Black Belt**, **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**), **Certified Construction Projects Contractor**, **Certified Energy Auditor** and a **Chartered Engineer**. Moreover, he is an active member of **American Society for Quality**, Project Management Institute (**PMI**), **Body of Certified Energy Auditors** and **Technical Chamber of Greece**. He has further received various recognition and awards and delivered numerous trainings, seminars, courses, workshops and conferences internationally.

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

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.
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.

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	***What is a Valve?***
0900 – 0930	***Economics Based Upon Valve Marketing***
0930 – 0945	*Break*
0945 – 1100	***Economics Based Upon Valve Selection***
1100 – 1215	***Which Valve for Off/On, or is it On/Off Service? Your First Big Decision***
1215 – 1230	*Break*
1230 – 1330	***Valve Emissions & Energy Conservation***
1330 – 1420	***Acceptance Procedure for In-House Valve Testing & Verifications***
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2

0730 – 0830	***Valve Maintenance & Repair***
0830 – 0930	***Steam Valve Maintenance & Relief Valve Testing***
0930 – 0945	*Break*
0945 – 1100	***Valve Sizing for Liquids***
1100 – 1215	***Valve Sizing for Gases***

1215 – 1230	*Break*
1230 – 1420	***Selecting Control Valves, Actuators & Regulators***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3

0730 – 0930	***Valves For Special Processes***
0930 – 0945	*Break*
0945 – 1100	***Valve Material Selection & Standards***
1100 – 1215	***Valve Packing, Seals & Seats***
1215 – 1230	*Break*
1230 – 1420	***Valve Maintenance & Repair***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4

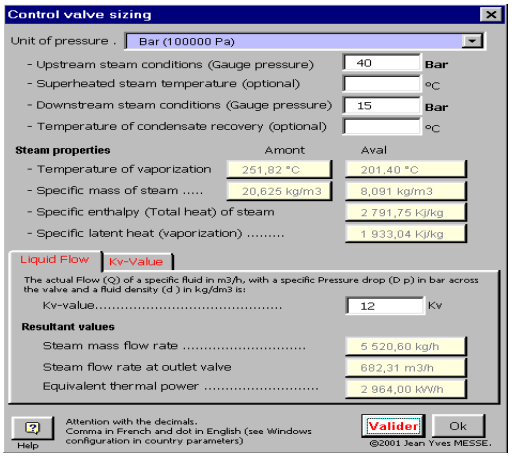
0730 – 0930	***Valve Noise & Understanding What it Means***
0930 – 0945	*Break*
0945 – 1100	***Understanding the Basics of Pressure, Temperature &Flow***
1100 – 1215	***Measurement as it Relates to Valves & the System***
1215 – 1230	*Break*
1230 – 1420	***What Causes Valve Failures in Design, Repair, Testing & Manufacturing***
1420 – 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5

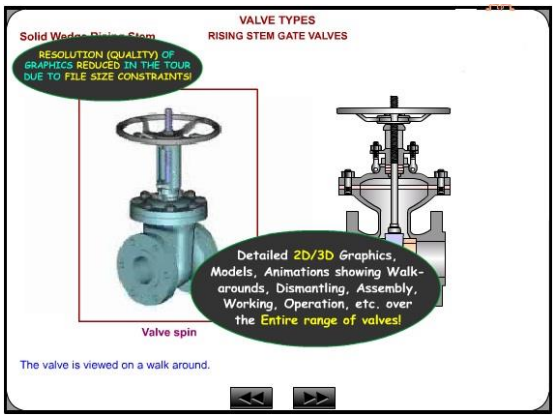
0730 – 0930	***Bogus Valves & Fasteners***
0930 – 0945	*Break*
0945 – 1100	***Fluid Mechanics for Valve Designers, Specifiers & Users***
1100 – 1215	***Understanding the Concepts of Valve Designing for the Future***
1215 – 1230	*Break*
1230 – 1345	***General Discussion***
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Simulators (Hands-on Practical Sessions)

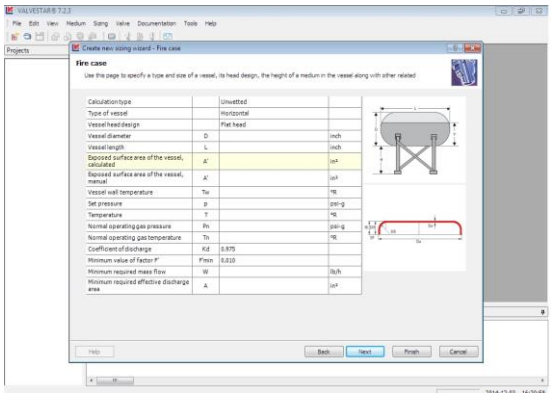
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art "Valve Sizing Software", "Valve Software 3.0", "Valvestar 7.2 Software" and "PRV²SIZE Software".



Valve Sizing Software



Valve Software 3.0



Valvestar 7.2 Software

PRV²SIZE Software

Course Coordinator

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