



**COURSE OVERVIEW ME0396**

**Selection of Compressors in the Oil and Gas Industry**

**Course Title**

Selection of Compressors in the Oil and Gas Industry

**Course Date / Venue**

Session 1: February 23-27, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE  
Session 2: August 25-29, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE



**Course Reference**

ME0396

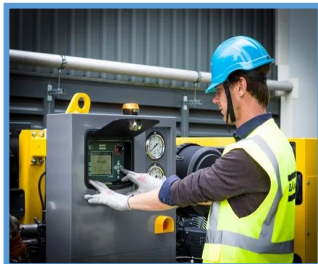
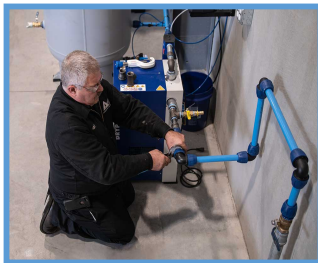


**Course Duration**

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.***



Compressed air, together with electricity, is today the most frequently used carrier of energy in industry. Whereas the subject of electricity and its associated electrical appliances is well known and understood, the possibilities, advantages and essentials of compressed air are far less well understood. In general, compressed air systems have advantages in safety, cleanliness, flexibility and the ready availability of the medium. This course is aimed at assisting the user of compressed air systems how to select the most suitable system to install and to help in the understanding how such a system can be maintained at a high level of efficiency. The source of the compressed air power, the compressor and its associated equipment, must be selected and maintained with care. In many cases the compressed air system is a major consumer of energy and any decrease in efficiency will adversely affect the overall operating cost of the plant. Attention is paid in the course to the pressure systems safety regulations and approved codes of practice as well as safety at work regulations. The course makes use of numerous worked examples where calculations are deemed appropriate to quantify the various system parameters.



### Course Objectives

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

- Apply and gain a comprehensive knowledge on Selection, Installation and Use of Compressed Air Services
- Discuss the principles and advantages of compressed air as an energy carrier in comparison to electricity.
- Explore the key components of a compressed air system, including compressors, air treatment equipment, and distribution networks.
- Identify the factors influencing the selection of suitable compressed air systems for various industrial applications.
- Learn best practices for maintaining and optimizing compressed air systems to ensure high operational efficiency and reduce overall energy costs.
- Gain knowledge of safety regulations, pressure system safety codes, and work safety guidelines related to compressed air systems.
- Apply theoretical knowledge through practical examples and calculations to evaluate and quantify system parameters effectively.

### Exclusive Smart Training Kit - H-STK®



*Participants of this course will receive the exclusive “Harvard 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


The course has been developed for practicing engineers from the mechanical, chemical and process industrial areas who have an interest in understanding and improving their knowledge of the subject of the selection and installation of compressed air services. In addition, it should also prove useful to those possessing a rudimentary knowledge on the subject, but who may require a refresher or update. No prior knowledge of the topic is required and participants will be taken initially through a detailed exposition of the relevant engineering principles as they apply to this very practical subject.

**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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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.

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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.

**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. Ahmed Mady** is a **Senior Mechanical Engineer** and **Project Manager** with over **40 years** of practical experience. His experience covers **Pump Selection, Installation, Performance & Control, Pump & Valve Operation, Control, Maintenance & Troubleshooting, Aviation Fueling Operations, Pumps, Compressors & Turbines Selection, Operation, Heat Exchanger Design, Operation, Performance, Inspection, Maintenance & Repair, Steam Boilers Operation, Maintenance and Control System, Heat Exchangers Operations, Maintenance & Troubleshooting, Water Tanks Filling Station Operation, Water Pipes Inspection & Repair, Water Treatment Technology, RO Plants, MSF Plants, Industrial Water Treatment, Piping System, Water Filtering, Pump Selection, Installation, Performance & Control, Compressors & Turbines Selection & Operation, Heat Exchangers Design & Selection, TEMA & ASME Section VIII Requirements, Steam Boilers Operation & Maintenance, Valve Operation & Troubleshooting, Aviation Fueling Operations, Maintenance Management, Reliability Engineering, Maintenance Auditing, Reliability Centered Maintenance, Maintenance Benchmarking, Maintenance Planning, Root Cause Failure Analysis, Lubrication Technology, Cost Control & Performance Improvement.**

Mr. Ahmed has travelled all over **Europe, Asia** and the **Americas** joining numerous conferences and workshops with international companies such as **IBM, System Science Corporation (SSC)** and **International Air Transport Association (IATA)**.

Earlier in his career, he had occupied several challenging roles with several large Logistics and maintenance companies as a **Maintenance Manager, Maintenance Engineer, Logistics Planning Branch Chief, Commander** of the Air Force Logistics, **Systems Analyst, Training Branch Chief, Systems & Communication Engineer** and **Computer Programmer**.

Mr. Ahmed has a **Bachelor** degree in **Mechanical Engineering** and a **Certified Trainer/Instructor**. Further, he has gained **Diplomas on Civil Aviation Engineering, Islamic Studies** and **Information Systems & Technology**. Moreover, he is a **Certified Internal Verifier** by **City & Guilds Level 4 Certificate** in **Leading the Internal Quality Assurance of Assessment Processes & Practice** under the **IQA Qualification (Internal Quality Assurance)** and a **Certified Assessor** by **City & Guilds Level 3 Certificate** in **Assessing Vocational Achievement** under the **TAQA Qualification (Training, Assessment & Quality Assurance)** and a **Certified Trainer/Assurance/Internal Verifier** of the **British Institute of Leadership & Management (ILM), UK**. Further, he has delivered numerous trainings, workshops and conferences and projects worldwide.

**Course Fee**

**US\$ 5,500** per Delegate + **VAT**. This rate includes H-STK® (Harvard Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

**Accommodation**

Accommodation is not included in course fees. However, any accommodation required can be arranged by Harvard Technology at the time of booking.

**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	<i>Registration &amp; Coffee</i>
0800 - 0815	<i>Welcome and Introduction</i>
0815 - 0830	<b>PRE-TEST</b>
0830 - 0930	<b>Introduction</b> <i>Fundamentals of Compressed Air • Terminology</i>
0930 - 0945	<i>Break</i>
0945 - 1130	<b>Applications For Pneumatics</b> <i>Advantages Of Compressed Air, Pressure Ranges, Possible Applications, Specialized Applications.</i>
1130 - 1230	<b>Compressed Air Generators</b> <i>Displacement And Turbo-Compressors</i>
1230 - 1245	<i>Break</i>
1245 - 1330	<b>Assessment Of Air Consumption of a Plant</b> <i>Main Consideration, Pneumatic Cylinders, Operating Pressure &amp; Flow, Maximum &amp; Average Load, Future Expansion, Capacity/Pressure Relationship, Air Leakage</i>
1330 - 1420	<i>Worked Examples</i>
1420 - 1430	<b>Recap</b>
1430	<i>Lunch &amp; End of Day One</i>

**Day 2**

0730 - 0930	<b>Selection of Compressor Plant</b> <i>Air Compressors, Specific Power Consumption, Capacity &amp; Pressure Limitations, Output Control, Selection of Compressor Prime Movers, Application Requirements, Evaluating Costs, Packaged Compressors, Performance Testing, Water Lubricated Compressors.</i>
0930 - 0945	<i>Break</i>
0945 - 1130	<b>Selection Of Compressor Ancilliary Equipment</b> <i>After-Cooler, Air Receiver, Drain Traps, Air Dryers, Re-Heaters, Gauges &amp; Other Protective Devices, Protective Switches, Pressure Relief Valve, Air Discharge Silencer, Air Vent Silencer, Air Intake Silencer, Air Intake Filter, Cooling Water Filter, Distribution Piping.</i>

1130 - 1230	<b>Worked Examples</b>
1230 - 1245	Break
1245 - 1330	<b>Compressor Installation</b> Type of Installation, Compressor Siting, Compressor Intake, Compressor Discharge, Cooling Water System, Ventilation
1330 - 1420	<b>Worked Examples</b>
1420 - 1430	<b>Recap</b>
1430	Lunch And End of Day Two

**Day 3**

0730 - 0930	<b>Energy Conservation and Heat Recovery</b> Introduction, Energy Conservation, Heat Recovery.
0930 - 0945	Break
0945 - 1130	<b>Worked Examples</b>
1130 - 1230	Break
1230 - 1245	<b>Worked Examples (cont'd)</b>
1245 - 1330	Break
1330 - 1420	<b>Main Line Installation</b> Air Mains, Materials for Air Line Pipes and Fittings, Determination of Pipe Size, Reserve Air Capacity, Main line Accessories, Installing the Air Main, Testing an Air System
1420 - 1430	<b>Worked Examples</b>
1430	Lunch and End of Day Three

**Day 4**

0730 - 0930	<b>Final Service Line Installation</b> Individual Drop and Feed Lines, Filters/Separators, Pressure Regulators, Lubrication, Hose and Fittings, Flow metering
0930 - 0945	Break
0945 - 1130	<b>Testing the System</b> Testing Main and Branch Line, Testing for Leakage
1130 - 1230	Break
1230 - 1245	<b>Worked Examples</b>
1245 - 1330	Break
1330 - 1420	<b>Precautions</b> During Commissioning, During Running, Safety of Personnel, The Safe Use of Compressed Air, Hot air ducting, Circuit diagrams, Venting of Pneumatic Enclosure
1420 - 1430	<b>Worked Examples</b>
1430	Lunch & End of Day Four

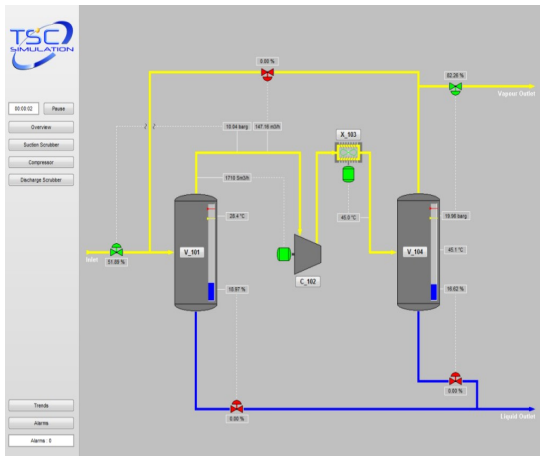
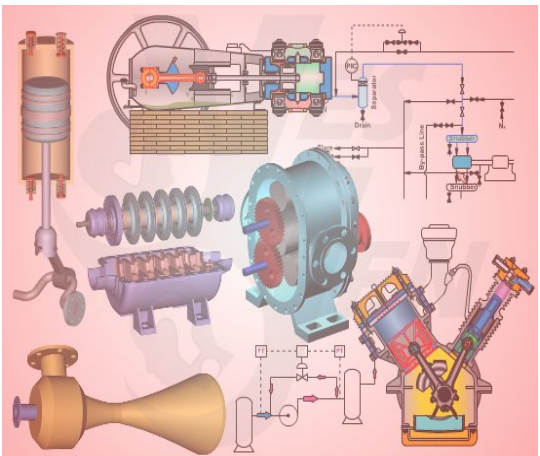
**Day 5**

0730 - 0930	<p><b>Legislation</b>  <i>Health And Safety At Work Act 1974, The Pressure Systems Safety Regulations, Noise At Work Regulations 1989, Supply Of Machinery Safety Regulations, Pressure Equipment Regulations, The Simple Pressure Vessels (Safety) Regulations, Provision And Use Of Work Equipment Regulations, Manual Handling Operations Regulations, Control Of Substances Hazardous To Health, Personal Protective Equipment At Work Regulations, Construction Products Regulations, The Electrical Equipment (Safety) Regulations, Electromagnetic Compatibility Regulations</i>  <i>Equipment And Protective Systems Intended For Use In Potentially Explosive Atmospheres, Health And Safety (Safety Signs And Signals) Regulations, Management Of Health And Safety At Work, Directive 80/181/EEC On Metrication</i></p>
0930 - 0945	Break
0945 - 1130	<p><b>Standards</b>  <i>Standardization, Status of Standards, Standards And Legislation</i></p>
1130 - 1230	<p><b>Units And Conversion Factors</b>  <i>The International System Of Units, Units In General Use In The Compressed Air Industry, Conversion Factors</i></p>
1230 - 1245	Break
1245 - 1345	<b>Worked Examples</b>
1345 - 1400	<b>Course Conclusion</b>
1400 - 1415	<b>POST-TEST</b>
1415 - 1430	<i>Presentation Of Course Certificates</i>
1430	<i>Lunch &amp; End Of Course</i>

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**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 “SIM 3300 Centrifugal Compressor” and “CBT on Compressors” simulators.

	
<p><b><u>SIM 3300 Centrifugal Compressor Simulator</u></b></p>	<p><b><u>CBT on Compressors</u></b></p>

**Course Coordinator**

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