

COURSE OVERVIEW RE0088
Condition Monitoring & Inspection Techniques

Course Title

Condition Monitoring & Inspection Techniques

Course Date/Venue

Session 1: June 30-July 03, 2025/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Session 2: December 14-18, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE



Course Reference

RE0088

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes 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 Condition Monitoring & Inspection Techniques. It covers the importance and core concepts of reliability engineering; the rationale behind condition monitoring and its role in maintaining equipment reliability; the visual inspection techniques and methodologies; the common issues found through visual inspections and the significance of routine visual checks; the vibration analysis and interpreting vibration spectra and oil analysis; and the significance of lubricant testing on machinery health.



Further, the course will also discuss the thermography and infrared imaging by using infrared cameras to detect issues from electrical faults to machinery overheating; the ultrasonic inspection techniques in detecting leaks, bearing conditions and other potential failures; the principles and applications of acoustic emission in capturing transient events; and the motor current signature analysis (MCSA) including corrosion monitoring and control.

During this interactive course, participants will learn to interpret results from various monitoring tools; use condition monitoring data to predict maintenance needs and plan effectively; the best practices for documenting findings; create reports and communicate results to stakeholders; and the new technologies like the IoT and predictive analytics and their role in future condition monitoring.

Course Objectives

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

- Apply and gain a good working knowledge on condition monitoring and inspection techniques
- Discuss the importance and core concepts of reliability engineering
- Recognize the rationale behind condition monitoring and its role in maintaining equipment reliability
- Employ visual inspection techniques and methodologies and identify the common issues found through visual inspections and the significance of routine visual checks
- Carryout vibration analysis and interpret vibration spectra
- Apply oil analysis and the significance of lubricant testing on machinery health
- Carryout thermography and infrared imaging by using infrared cameras to detect issues from electrical faults to machinery overheating
- Apply ultrasonic inspection techniques in detecting leaks, bearing conditions and other potential failures
- Identify the principles and applications of acoustic emission in capturing transient events
- Carryout motor current signature analysis (MCSA) including corrosion monitoring and control
- Interpret results from various monitoring tools and use condition monitoring data to predict maintenance needs and plan effectively
- Implement best practices for documenting findings, create reports and communicate results to stakeholders
- Explore new technologies like the IoT and predictive analytics and their role in future condition monitoring

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 condition monitoring and inspection techniques for condition monitoring engineers, mechanical and process engineers, reliability engineers, operations engineers, service technicians, technical managers, plant managers, maintenance managers and others who work in the maintenance and production departments.

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)

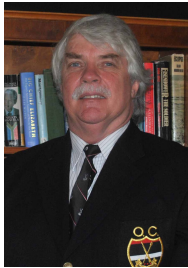
Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** 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. Den Bazley, PE, BSc, is a **Senior Mechanical Maintenance Engineer** with over **25 years** of industrial experience in **Oil, Gas, Refinery, Petrochemical, Power and Utilities** industries. His wide expertise includes **Condition Based Monitoring, Piping System, Process Equipment, Mechanical Integrity, Maintenance Management, Reliability Management, Reliability Centred Maintenance (RCM), Total Plant Maintenance (TPM) and Reliability-Availability-Maintainability (RAM), Engineering Drawings, Codes & Standards, P&ID Reading, Interpretation & Developing**. His

experience covers **Design, Construction and Maintenance of Storage Tank, Hydraulic Control Valves, rotating and static equipment including Safety Relief Valves, Boilers, Pressure Vessels, Tanks, Heat Exchangers, Bearings, Compressors, Pumps, Pipelines, Motors, Turbines, Gears, Lubrication Technology and Mechanical Seals**. Further, he has experience in Waste Water Treatment, **Water Treatment, Welding, NDT, Vehicle Fleet and Budgeting & Cost Control**. He is well-versed in **CMMS** and various International Standards including ISO 14001.

During his career life, Mr. Bazley has gained his practical and field experience through his various significant positions and dedication as the **Engineering Manager, Maintenance Manager, Construction Manager, Project Engineer, Mechanical Engineer, Mechanical Services Superintendent, Quality Coordinator and Planning Manager** for numerous international companies like **ESSO, FFS Refinery, Dorbyl Heavy Engineering (VECOR), Vandenberg Foods (Unilever), Engen Petroleum, Royle Trust and Pepsi-Cola**.

Mr. Bazley is a **Registered Professional Engineer** and has a **Bachelor** degree in **Mechanical Engineering**. Further, he is a **Certified Engineer** (Government Certificate of Competency GCC Mechanical Pretoria), a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership and Management (ILM)**, an active member of the **Institute of Mechanical Engineers (IMechE)** and has delivered numerous trainings, courses, seminars and workshops 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

US\$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Howard 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 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 & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 0930	Fundamentals of Reliability Engineering <i>Introduction to Reliability Engineering, its Importance and Core Concepts</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Principles of Condition Monitoring <i>Understanding the Rationale Behind Condition Monitoring and its Role in Maintaining Equipment Reliability</i>
1100 – 1230	Principles of Condition Monitoring (cont'd) <i>Understanding the Rationale Behind Condition Monitoring and its Role in Maintaining Equipment Reliability (cont'd)</i>
1230 – 1245	<i>Break</i>
1245 – 1420	Inspection Techniques <i>Various Inspection Methodologies Employed in Industry</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>

Day 2

0730 – 0930	Visual Inspection Techniques <i>Common Issues Found through Visual Inspections and the Significance of Routine Visual Checks</i>
0930 – 0945	<i>Break</i>
0945 – 1100	Visual Inspection Techniques (cont'd) <i>Common Issues Found through Visual Inspections and the Significance of Routine Visual Checks (cont'd)</i>
1100 – 1230	Vibration Analysis <i>Vibration Analysis, its Importance, Tools Used and Interpreting Vibration Spectra</i>
1230 – 1245	<i>Break</i>
1245 – 1420	Oil Analysis <i>The Significance of Lubricant Testing and what it Reveals About Machinery Health</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day Two</i>

Day 3

0730 – 0930	Thermography & Infrared Imaging <i>Using Infrared Cameras to Detect Issues, from Electrical Faults to Machinery Overheating</i>
0930 – 0945	Break
0945 – 1100	Thermography & Infrared Imaging (cont'd) <i>Using Infrared Cameras to Detect Issues, from Electrical Faults to Machinery Overheating (cont'd)</i>
1100 – 1230	Ultrasonic Inspection Techniques <i>Applications in Detecting Leaks, Bearing Conditions and Other Potential Failures</i>
1230 – 1245	Break
1245 – 1420	Acoustic Emission Testing <i>Principles and Applications of Acoustic Emission in Capturing Transient Events</i>
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 4

0730 – 0930	Motor Current Signature Analysis (MCSA) <i>How Analyzing the Current in Motors can Predict Upcoming Issues</i>
0930 – 0945	Break
0945 – 1100	Motor Current Signature Analysis (MCSA) (cont'd) <i>How Analyzing the Current in Motors can Predict Upcoming Issues (cont'd)</i>
1100 – 1230	Corrosion Monitoring & Control <i>Techniques to Assess Corrosion and the Methods Employed to Control it</i>
1230 – 1245	Break
1245 – 1420	Interpreting Data from Monitoring Tools <i>How to Interpret Results from Various Monitoring Tools and their Significance</i>
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 5

0730 – 0930	Integration of Monitoring Data into Maintenance Plans <i>Using Condition Monitoring Data to Predict Maintenance Needs and Plan Effectively</i>
0930 – 0945	Break
0945 – 1100	Reporting & Documentation <i>Best Practices for Documenting Findings, Creating Reports and Communicating Results to Stakeholders</i>
1100 – 1230	Case Studies in Condition Monitoring <i>Real-World Examples Showcasing Successful Interventions and Missed Opportunities</i>
1230 – 1245	Break
1245 – 1345	Emerging Trends & Technologies in Condition Monitoring <i>Exploring New Technologies, such as IoT and Predictive Analytics and their Role in Future Condition Monitoring</i>
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 state-of-the-art simulator “iLearnVibration”.



Course Coordinator

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