COURSE OVERVIEW RE0801
Vibration Analyst Category: Category II (Mobius Institute)

Course Title
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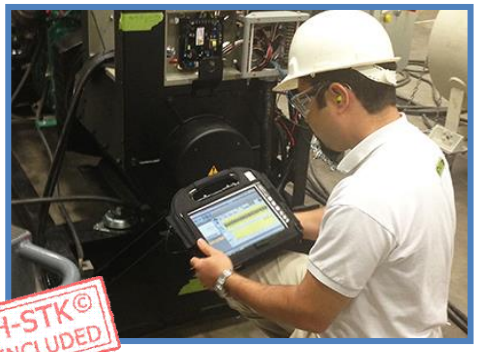


Course Date/Venue
Session1: May 31-June 04, 2026/Tamra Meeting Room, Al Bandar by Rotana, Creek Dubai, Dubai, UAE
Session 2: October 18-22, 2026/Crowne Meeting Room, Crowne Plaza Al Khobar, an IHG Hotel, Al Khobar, KSA

Course Reference
RE0801

Course Duration/Credits
Five davs/3.8 CEUs/38 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 vibration analysis in accordance with ISO 18436 standards. It covers the maintenance practices and condition monitoring technologies; the principles of vibration covering complete review of basics, waveform, spectrum (FFT), phase, orbits, modulation, beating and sum/differences signals; the data acquisition, transducer types, transducer selection, transducer mounting and natural frequency; and the transducer mounting, natural frequency, measurement point selection, following route and test planning.

Further, the course will also discuss the common measurement errors; the signal processing, filters, sampling, aliasing, dynamic range, resolution, Fmax and data collection time; the linear, overlap, peak hold, time synchronous, windowing and leakage averaging; windowing and leakage; the vibration analysis, spectrum analysis, time waveform analysis, orbit analysis, phase analysis and enveloping (demodulation); and the fault analysis for natural frequencies, resonances, imbalance, eccentricity, bent shaft, misalignment and cocked bearing.

During this interactive course, participants will learn the soft foot and mechanical looseness; the rolling element bearing analysis including analysis of induction motors, gears, belt driven machines, pumps, compressors and fans; the equipment testing and diagnostics covering impact testing (bump tests) and phase analysis; the corrective action, general maintenance repair activities and review of balancing process and shaft alignment procedures; running a successful condition monitoring program by setting baselines, alarms, setting goals, expectations, report generation and reporting success stories; and the acceptance testing and ISO standards.

Course Objectives

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

- Get prepared for the next Vibration Analyst exam and have enough knowledge and skills to pass such exam in order to get certified as a *Vibration Analyst: Category II"* in accordance with ISO 18436 standards from Mobius Institute
- Review maintenance practices and condition monitoring technologies
- Identify the principles of vibration covering complete review of basics, waveform, spectrum (FFT), phase, orbits, modulation, beating and sum/differences signals
- Carryout data acquisition and identify transducer types, transducer selection, transducer mounting and natural frequency
- Apply transducer mounting, natural frequency, measurement point selection, following route and test planning
- Identify the common measurement errors and illustrate signal processing, filters, sampling, aliasing, dynamic range, resolution, Fmax and data collection time
- Recognize linear, overlap, peak hold, time synchronous, windowing and leakage averaging as well as windowing and leakage
- Employ vibration analysis, spectrum analysis, time waveform analysis, orbit analysis, phase analysis and enveloping (demodulation)
- Apply fault analysis for natural frequencies, resonances, imbalance, eccentricity, bent shaft, misalignment, cocked bearing, soft foot and mechanical looseness
- Illustrate rolling element bearing analysis including analysis of induction motors, gears, belt driven machines, pumps, compressors and fans
- Carryout equipment testing and diagnostics covering impact testing (bump tests) and phase analysis
- Perform corrective action, general maintenance repair activities and review of balancing process and shaft alignment procedures
- Run a successful condition monitoring program by setting baselines, alarms, setting goals, expectations, report generation and reporting success stories
- Apply acceptance testing and review of ISO 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 vibration analysis in accordance with ISO 18436 standards for maintenance, reliability, rotating equipment, process, control and instrumentation personnel who are willing to gain, improve and/or update their knowledge and skills of practical aspects of machinery vibration monitoring, analysis and predictive maintenance. Engineers, maintenance supervisors, mechanical foremen, specialists and other technical staff will also benefit from this course.

Exam Eligibility & Structure

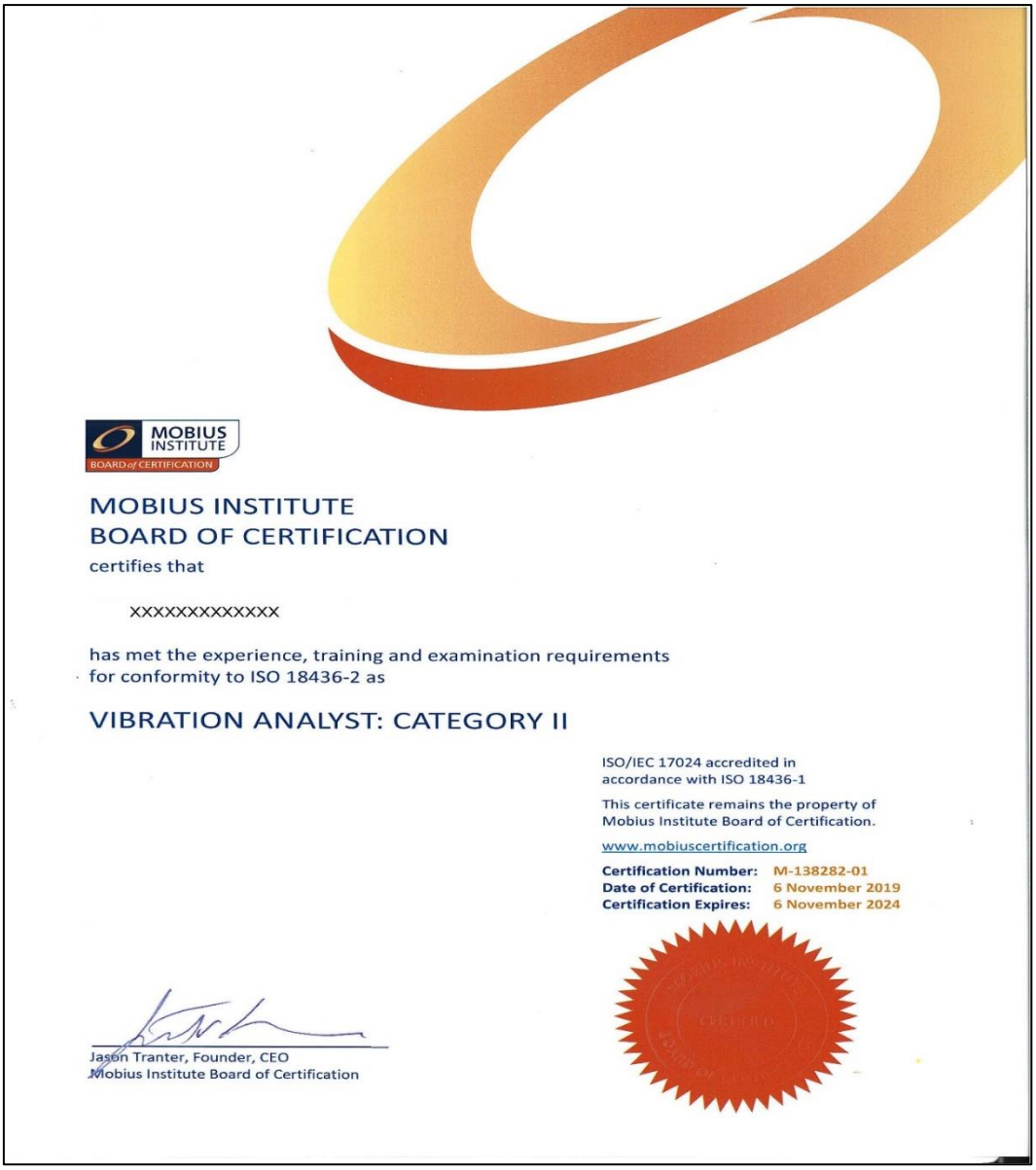
Exam candidates shall have the following minimum prerequisites: -

- Training course completed
- 18 months of vibration analysis experience, verified by an independent person
- Pass the exam

Course Certificate(s)

(1) Internationally recognized certificates will be issued to all participants of the course.

(2) Mobius Institute will certify the participants who will pass the examination for ***Vibration Analyst: Category II***.


MOBIUS INSTITUTE
BOARD of CERTIFICATION

MOBIUS INSTITUTE
BOARD OF CERTIFICATION
certifies that

xxxxxxxxxxxxx

has met the experience, training and examination requirements
for conformity to ISO 18436-2 as

VIBRATION ANALYST: CATEGORY II

ISO/IEC 17024 accredited in
accordance with ISO 18436-1

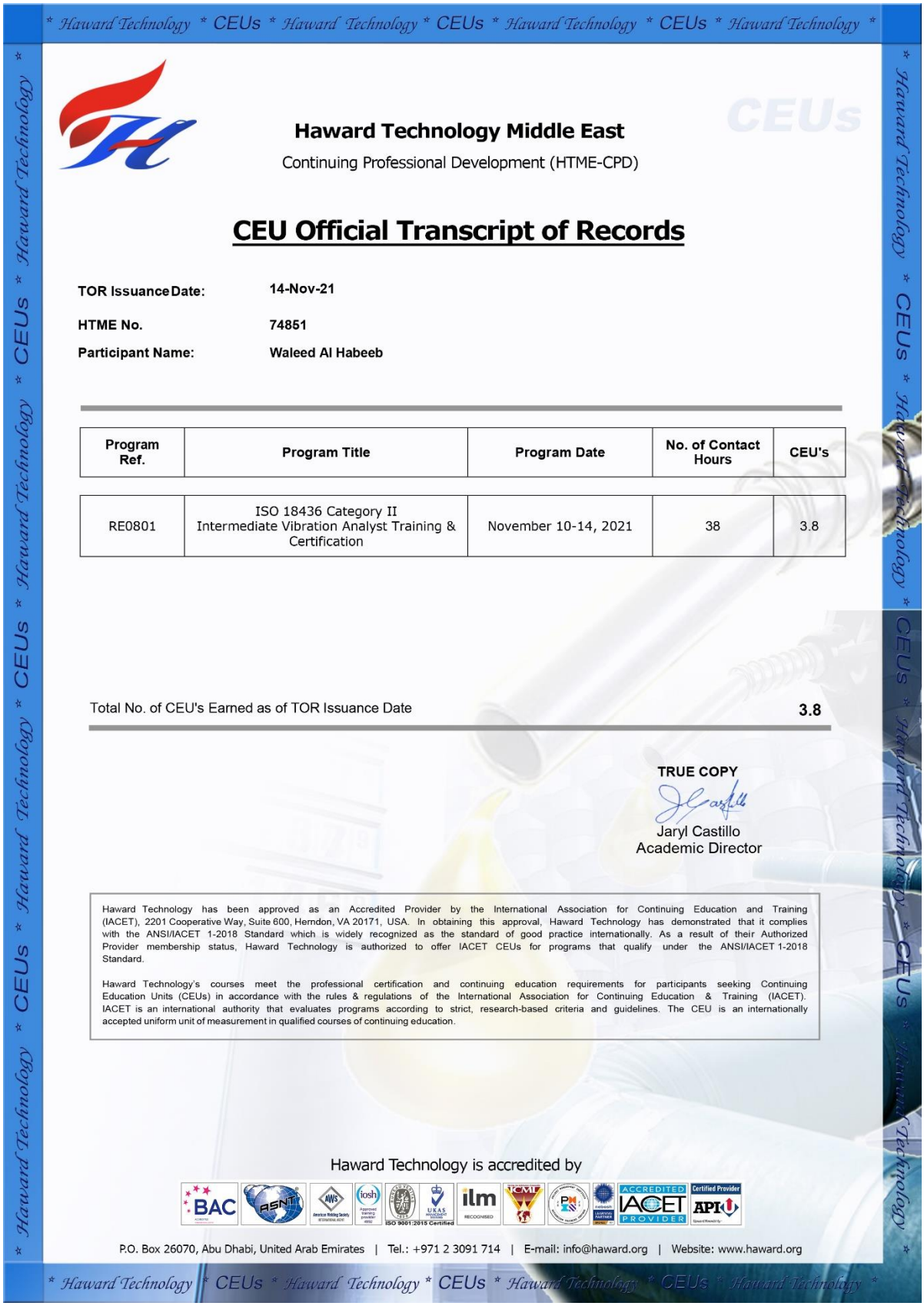
This certificate remains the property of
Mobius Institute Board of Certification.

www.mobiuscertification.org

Certification Number: M-138282-01
Date of Certification: 6 November 2019
Certification Expires: 6 November 2024

Jason Tranter, Founder, CEO
Mobius Institute Board of Certification

(3) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.



Haward Technology Middle East

Continuing Professional Development (HTME-CPD)

CEU Official Transcript of Records

TOR Issuance Date: 14-Nov-21

HTME No. 74851

Participant Name: Waleed Al Habeeb

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
RE0801	ISO 18436 Category II Intermediate Vibration Analyst Training & Certification	November 10-14, 2021	38	3.8

Total No. of CEU's Earned as of TOR Issuance Date **3.8**

TRUE COPY

Jaryl Castillo
Academic Director

Haward Technology has been approved as an Accredited Provider by the International Association for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2018 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2018 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 Association 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 is accredited by

P.O. Box 26070, Abu Dhabi, United Arab Emirates | Tel.: +971 2 3091 714 | E-mail: info@haward.org | Website: www.haward.org

Certificate Accreditations

Haward's certificates are accredited by the following international accreditation organizations: -

- Mobius Institute Board of Certification (MIBoC) Scheme

  Mobius Institute Board of Certification (**MIBoC**) is ISO/IEC 17024 and ISO 18436-1 accredited and provides globally recognised certification for Vibration Analysis, Infrared Thermography, Ultrasound and Asset Reliability. MIBoC is an impartial and independent entity that is directed by scheme and technical committees to ensure that its certification meets or exceeds the requirements defined by the applicable ISO standards. Haward Technology is a partner of various Mobius Training Partners.

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. Haward's certificates are internationally recognized and accredited by the British Accreditation Council (BAC). 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.

- 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 **3.8 CEUs** (Continuing Education Units) or **38 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. Riyadh Bsiso, MBA, BSc, ISO-VA, ADNT-NDT, LEEA, is a **Senior Mechanical Engineer** with extensive years of industrial experience within the **Oil & Gas**, **Refinery** and **Petrochemical** industries. His expertise widely covers in the areas of **Machine Reliability**, **Rotating Equipment** Faults & Malfunctions Troubleshooting, **Diagnostic** Techniques, **Vibration** Analysis, **Oil** Analysis, **Boroscopy & Corrective Actions**, Machinery **Balancing**, Machinery **Alignment**, **Vibration** Isolation, Resonance Control, Structural Analysis, **Modal** Testing Techniques, ODS Testing, **Torsional Vibration** Measurements, **Condition Monitoring** Systems, **Machinery** Fault Diagnostics, **Bearing** Technology, Mounting & Dismounting of **Roller Element Bearings** and Machine Diagnostic. He is also well versed in MS Office (Word, Excel, Power Point), AutoCAD, Mechanical Desktop & AutoDesk, Matlab, Ansys, Simulink, Vibration Analysis & Machinery Diagnostics Software - SPM Instruments, GE Scouts, SPM Intellinova, FAG Bearing Analyzer III, Detector III, FAG DetectX1s, FAG ProCheck, FAG Pro Torq, Bearinx - Bearing Calculation Software, ADRETM software (GE Bentley Nevada PL), VB8 – Commtest, and ERP (CRM, Salesforce, Service & Sales Management Modules).

During his career life, Mr. Riyadh has gained his practical and field experience through his various significant positions and dedication as the **Technical Manager**, **Sales & Services Manager**, **Managing Partner**, **Manager Technical/Business Development**, **Mechanical Engineer** - Condition Monitoring & Machine Diagnostic, **Condition Monitoring Engineer** and **Certified Trainer/Instructor** for UPDS, Samir Odeh Engineering Solutions and Schaeffler, just to name a few.

Mr. Riyadh has a **Master's** degree in **Business Administration** (Quality & Innovation Management) from the **University** of **Leicester**, **UK**, a **Bachelor's** degree in **Mechanical Engineering** (**Mechatronics**) and a **Diploma** in **IAM** Engineering Services, Roller Bearing Maintenance & Application Engineering. Further, he is an **Authorized Mobius ISO Category I-IV Instructor/Examiner** and has delivered numerous trainings, courses, seminars, conferences and workshops internationally.

Course Fee

US$ 7,500 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.

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 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	*Introduction & Welcome*
0815 - 0830	***PRE-TEST***
0830 – 0945	***Review of Maintenance Practices***
0945 – 1000	*Break*
1000 – 1200	***Review of Condition Monitoring Techniques***
1200 – 1300	*Lunch*
1300 – 1500	***Principles of Vibration*** *Complete Review of Basics ● Waveform, Spectrum (FFT), Phase & Orbits*
1500 - 1215	*Break*
1515 - 1720	***Principles of Vibration (cont'd)*** *Understanding Signals: Modulation, Beating, Sum/Differences*
1720 - 1730	***Recap***
1730	*End of Day One*

Day 2

0730 – 0945	***Data Acquisition*** *Transducer Types: Non-Contact Displacement*
0945 – 1000	*Break*
1000 – 1200	***Proximity Probes, Velocity Sensors & Accelerometers*** *Transducer Selection ● Transducer Mounting & Natural Frequency*
1200 – 1300	*Lunch*
1300 – 1500	***Proximity Probes, Velocity Sensors & Accelerometers (cont'd)*** *Measurement Point Selection ● Following Routes & Test Planning*
1500 - 1215	*Break*
1515 - 1720	***Proximity Probes, Velocity Sensors & Accelerometers (cont'd)*** *Common Measurement Errors*
1720 - 1730	***Recap***
1730	*End of Day Two*

Day 3

0730 – 0945	***Signal Processing*** *Filters: Low Pass, Band Pass, High Pass, Band Stop ● Sampling, Aliasing, Dynamic Range ● Resolution, Fmax, Data Collection Time*
0945 – 1000	*Break*
1000 – 1200	***Signal Processing (cont'd)*** *Averaging: Linear, Overlap, Peak Hold, Time Synchronous ● Windowing & Leakage*
1200 – 1300	*Lunch*
1300 – 1500	***Vibration Analysis*** *Spectrum Analysis ● Time Waveform Analysis (Introduction) ● Orbit Analysis (Introduction) • Phase Analysis: Bubble Diagrams & ODS ● Enveloping (Demodulation), Shock Pulse, Spike Energy, PeakVue*
1500 - 1215	*Break*
1515 - 1720	***Fault Analysis*** *Natural Frequencies & Resonances ● Imbalance, Eccentricity & Bent Shaft ● Misalignment, Cocked Bearing & Soft Foot ● Mechanical Looseness ● Rolling Element Bearing Analysis • Analysis of Induction Motors ● Analysis of Gears ● Analysis of Belt Driven Machines ● Analysis of Pumps, Compressors & Fans*
1720 - 1730	***Recap***
1730	*End of Day Three*

Day 4

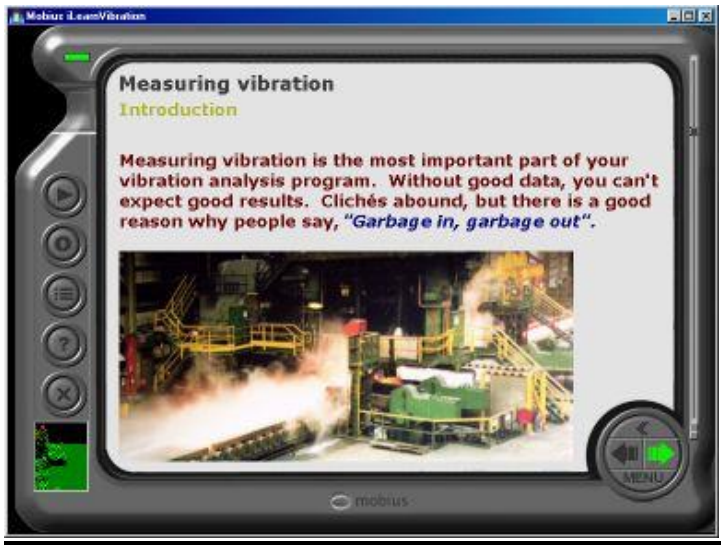
0730 – 0945	***Equipment Testing & Diagnostics*** *Impact Testing & Bump Tests ● Phase Analysis*
0945 – 1000	*Break*
1000 – 1200	***Corrective Action*** *General Maintenance Repair Activities ● Review of the Balancing Process ● Review of Shaft Alignment Procedures*
1200 – 1300	*Lunch*
1300 – 1500	***Running a Successful Condition Monitoring Program*** *Setting Baselines ● Setting Alarms: Band, Envelop/Mask, Statistical ● Setting Goals & Expectations (Avoiding Common Problems) ● Report Generation ● Reporting Success Stories*
1500 - 1215	*Break*
1515 - 1720	***Acceptance Testing***
1720 - 1730	***Recap***
1730	*End of Day Four*

Day 5

0730 - 0930	***Review of ISO Standards***
0930 - 0945	*Break*
0945 - 1045	***Review of ISO Standards (cont'd)***
1045 – 1145	***Review & MOCK EXAM***
1145 – 1245	*Lunch*
1245 – 1345	***Review & MOCK EXAM (cont'd)***
1345 – 1400	*Break*
1400 – 1700	***Mobius COMPETENCY EXAM (3 Hours)***
1700 – 1715	***Course Conclusion***
1715 – 1730	*Presentation of Course Certificates*
1730	*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".



iLearnVibration Simulator

Course Coordinator

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