

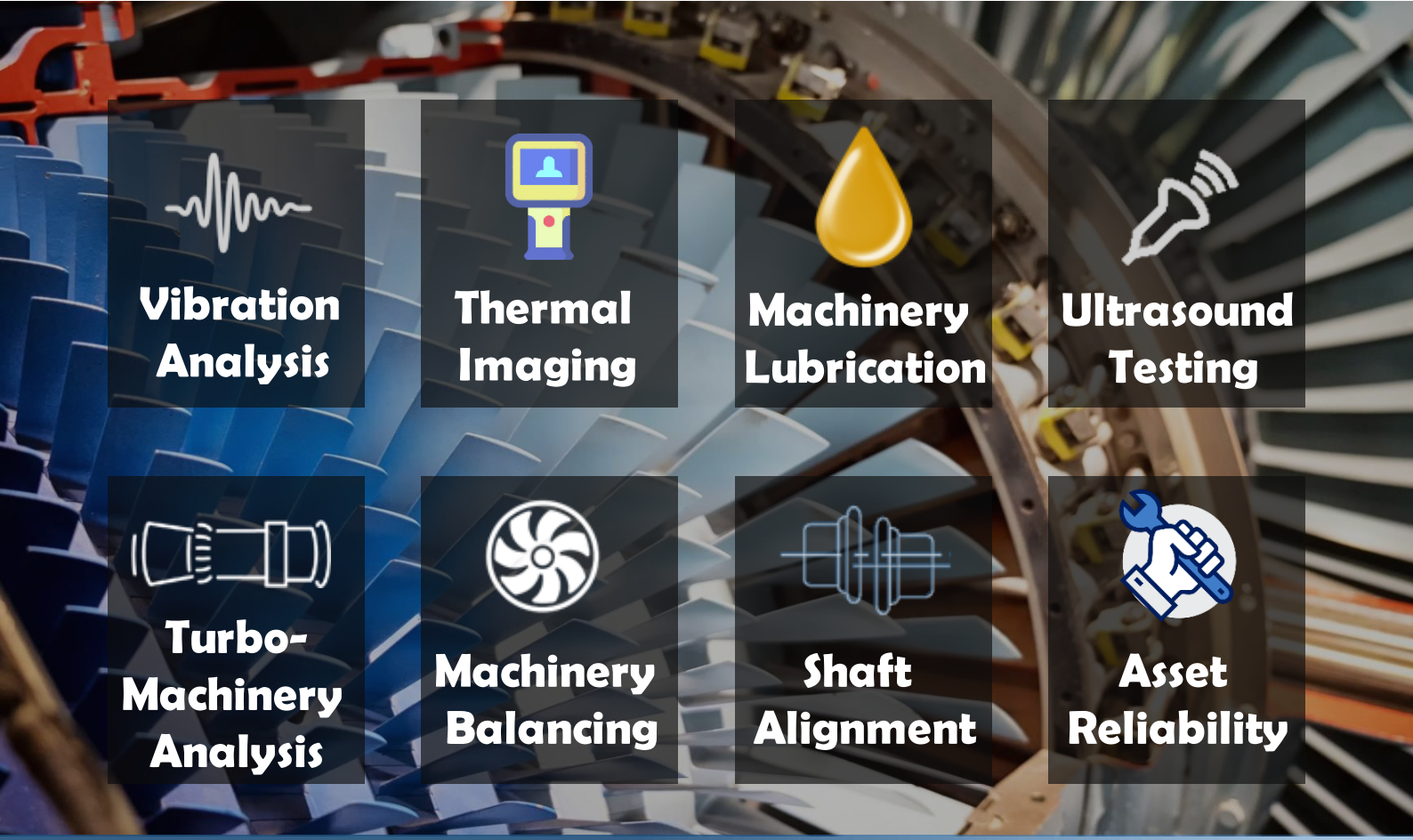


# Machinery Diagnostics Institute


*MDI – Machinery Diagnostics Institute are worldwide professionals providing class room and virtual online interactive technical trainings, based in Queensland – Australia.*

*Teaching staff are real practitioners specialized in delivering knowledge of Machinery Diagnostics techniques from basic levels to the most advanced.*

*Helping technical teams to develop their knowledge, knowing how to best utilize the most advanced diagnostics techniques and improve site performance through delivering accredit trainings and guiding them to the best practices.*




**Vibration Analysis**



**Thermal Imaging**



**Machinery Lubrication**




**Ultrasound Testing**



**Turbo-Machinery Analysis**



**Machinery Balancing**



**Shaft Alignment**



**Asset Reliability**

## OUR PARTNERS





Mobius Institute  
Industry's Leading Vibration  
Analysis Training & Certification  
Providers

# Vibration Analysis CAT II

## ISO 18436 – VA CAT II

ISO Vibration Analysis CAT II is a four-days course, the training is intended for people who have mastered the basics but who need to be able to take good data (and decide how the data collector should be set up). Analyze a range of faults conditions, and understand balancing and alignment.

**MDI – Machinery Diagnostics Institute** Provides this training as per partnership with **Mobius Institute**, Accredited certification of successful completion is issued from **Mobius Institute** after the training. Accredited certification according to ISO 18436 is issued from **Mobius Institute** after passing the ISO examination.

### ISO Vibration Analysis – CAT II Training

#### Main Topics:

- Review of maintenance practice
- Review of condition monitoring tech
- Principles of vibration
- Complete review of basics
- Waveform, spectrum (FFT), phase & orbits
- Signals: modulation, beating.. Etc.
- Data acquisition
- Signal processing
- Vibration analysis
- Fault analysis
- Equipment testing and diagnostics
- Correction action
- Running a successful CM program
- Acceptance testing
- Review of ISO standards

### VCAT-II CANDIDATE PROFILE

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This course is intended for the vibration analyst who will:

- Collect vibration data
- Validate that the data is good
- Set up the analyzer for routine data collection and special tests
- Diagnose most of the common fault conditions
- Perform special tests to validate unbalance, misalignment, resonance, looseness, and other conditions
- Know how to perform precision shaft alignment and balancing
- Use the training and certification as the next step in a rewarding career as a vibration analyst



MDI - Machinery Diagnostics Institute - Gracemere, Queensland – Australia  
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## ISO Vibration Analysis – CAT II Training Agenda

Day	Session Date & Timing	Topic
1	Session Duration (8 Hours)	<ul style="list-style-type: none"> <li>Review of maintenance practices</li> <li>Review of condition monitoring technologies</li> <li>Principles of vibration</li> <li>Data acquisition</li> <li>Proximity probes, velocity sensors, and accelerometers</li> <li>Signal processing               <ul style="list-style-type: none"> <li>Filters: Low pass, band pass, high pass, band stop</li> <li>Sampling, aliasing, dynamic range</li> <li>Resolution, Fmax, data collection time</li> <li>Averaging: linear, overlap, peak hold, time synchronous</li> <li>Windowing and leakage</li> </ul> </li> </ul>
2	Session Duration (8 Hours)	<ul style="list-style-type: none"> <li>Vibration analysis               <ul style="list-style-type: none"> <li>Spectrum analysis</li> <li>Time waveform analysis (introduction)</li> <li>Orbit analysis (introduction)</li> <li>Phase analysis: bubble diagrams and ODS</li> <li>Enveloping (demodulation), shock pulse, spike energy, PeakVue</li> </ul> </li> </ul>
3	Session Duration (8 Hours)	<ul style="list-style-type: none"> <li>Fault analysis               <ul style="list-style-type: none"> <li>Natural frequencies and resonances</li> <li>Imbalance, eccentricity and bent shaft</li> <li>Misalignment, cocked bearing and soft foot</li> <li>Mechanical looseness</li> <li>Rolling element bearing analysis</li> <li>Analysis of induction motors</li> <li>Analysis of gears</li> <li>Analysis of belt-driven machines</li> <li>Analysis of pumps, compressors, and fans</li> </ul> </li> </ul>
4	Session Duration (8 Hours)	<ul style="list-style-type: none"> <li>Equipment testing and diagnostics               <ul style="list-style-type: none"> <li>Impact testing and bump tests</li> <li>Phase analysis</li> </ul> </li> <li>Corrective action               <ul style="list-style-type: none"> <li>General maintenance repair activities</li> <li>Review of the balancing process</li> <li>Review of shaft alignment procedures</li> </ul> </li> <li>Running a successful condition monitoring program               <ul style="list-style-type: none"> <li>Setting baselines</li> <li>Setting alarms: band, envelope/mask, statistical</li> <li>Setting goals and expectations (avoiding common problems)</li> <li>Report generation</li> <li>Reporting success stories</li> </ul> </li> <li>Acceptance testing</li> <li>Review of ISO standards</li> </ul>





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## ISO Vibration Analysis – CAT II Training Facts

### Compliance:

- Training and certification: ISO 18436-2
- Certification: ISO 18436-1, ISO/IEC 17024
- Training: ISO 18436-3

### Exam:

- Three hours
- 100 multiple-choice questions
- 70% passing grade
- Can be taken online

### Certification requirements:

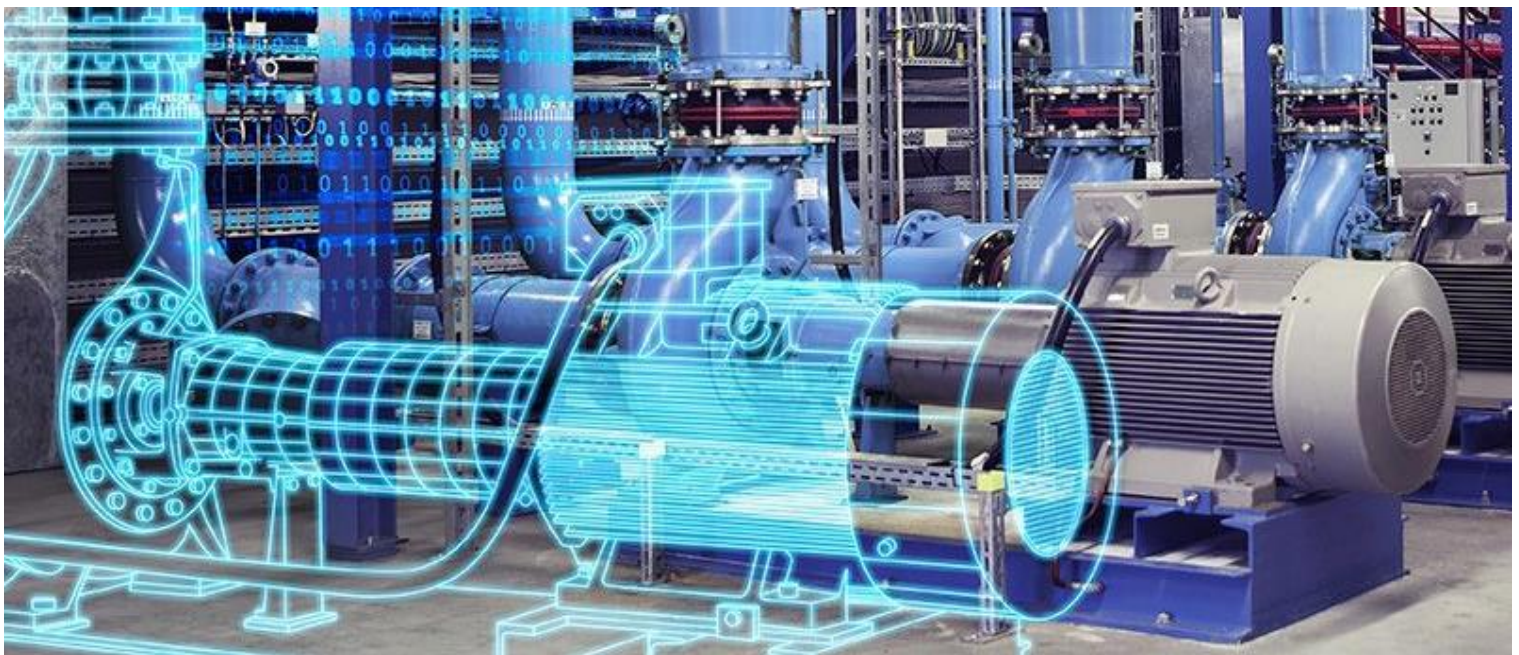
- Training course completed
- 18 months of vibration analysis experience, verified by an independent person
- Pass the exam
- Valid for 5 years

### Pre-study:

- Access to the “Learning Zone” upon registration and payment
- Complete set of videos covering every topic
- An excellent way to be prepared and get the most from the course

### Post-study:

- Continue to access the Learning Zone for 4-months after the course or upgrade your access for a lifetime with Life Long Learning (LLL).



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