



# Category I Vibration

## ISO 18436-2

This course is appropriate for those who are new to machinery vibration analysis as well as those who wish to gain awareness of the technology. Whether you will be collecting and analyzing data, managing people who do or simply want to understand what vibration is all about; this course is for you! Anyone may take the course and exam but 6 months experience is required for certification



3 Days  
2 Hour Certification  
Exam on Day 4



### Why Take This Course?

- \* Certification opens up new career paths
- \* Learn to collect and validate vibration data
- \* Learn basic analysis
- \* Learn why machines fail

Ensure employees have the competency to do their jobs

### What Are People Saying?

*"Alan is an expert at explaining technical concepts to non-technical people. He takes the time to make sure everyone's questions are answered. Ample animations and videos make the concepts easier to understand. You will be surprised at how much you learn in this course!"*

32+ Years  
1000's Trained  
English + Spanish  
Live Online + On-Site  
Public + Private

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Course Schedule



ZencoVibrations.com/shop



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VIBRATION EXPERTS





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Alan Friedman, aka the Vibe Guru, is the founder and CEO of Zenco and the author of "Audit it. Improve it: Getting The Most from Your Vibration Monitoring Program."



Alan is Cat IV Certified. He has taught 1000's of students worldwide for over 32 years in both English and Spanish and he has visited hundreds of industrial sites of all types to set up condition monitoring programs. All courses are taught by Alan personally.



### Partial Topic List

#### Maintenance Practices

- Reactive
- Run to Failure
- Preventive (calendar based)
- Condition Based
- Proactive
- RCM / FMECA
- P-F Interval
- Key performance indicators
- OEE
- FMECA
- Program management

#### Condition monitoring technologies

- Ultrasound
- IR Thermography
- Motor Testing
- Oil Analysis
- Ferrography

#### Vibration Fundamentals

- Amplitude: RMS, peak and peak-peak
- Frequency Hz, CPM, Orders
- Phase
- Units of vibration (D, V, A)
- ISO RMS overalls and alarms
- Complex vibration, Time waveform
- Vibration spectrum and FFT
- Forcing frequencies
- Orders and order normalization

#### Data acquisition

- How is vibration measured?
- Sensor types
- Test points
- Sensor mounting
- Naming conventions
- Routes: Downloading and following routes
- Field observations and defect detection
- Recognizing bad data

#### Signal processing

- How does your analyzer work?
- Common settings
- Fmax, lines of resolution (LOR)
- Averaging, ICP power etc.
- Importance of test configuration

#### Vibration analysis

- How to analyze vibration spectra
- Data presentation
- Trending and alarms
- Fault Diagnosis

#### Diagnosing common machine faults

- Unbalance, Misalignment
- Looseness
- Rolling element bearings
- Electric motor faults
- Pumps, fans and compressors
- Belts and Gears

#### Setting alarms

- ISO standards and alarms
- Mask Alarms + Band alarms

Learn!  
Get Certified!  
Earn More!



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