

Training courses according to ISO standard

# Accredited Vibration Analyst according to ISO CAT I, II & III

SPM Academy offers three levels of Vibration Analysis training in compliance with ISO and conducts the test that can give the participant the official ISO 18436-2 approval as Vibration Analyst. The certification is internationally recognized and is becoming a merit or even a demand for some types of jobs in industry and offshore.

The first level CAT I is very much a general introduction of Condition Monitoring to maintenance personnel who are working in industries with high demands on the skills of their maintenance engineers. It gives knowledge and motivation to get involved in the work of improving plant performance. The two higher levels, CAT II and III, are intended for Vibration Analysts who want to expand their knowledge and better use the potential of vibration analysis to contribute to improving machine reliability.

SPM Academy is a Mobius Institute approved training center and thus we use the Mobius professional interactive training system. When registering for the course, you get access to the Mobius Institute Learning Zone. On the Learning Zone, you can view movies of the lessons with quizzes so that you can prepare for the course. You can continue to access the Learning Zone for six months after the course!

During the course you see the professionally developed slides, with 3D animations, Flash interactions, and powerful software simulations. We make it very easy to understand vibration analysis. During the course we also use wireless polling devices to conduct quizzes with anonymous scoring; it helps attendees to see if they understand the material, and it ensures that the instructor knows if everyone is keeping up.



## ISO I Category I - Basic Vibration Analysis Course

*A great way to jump-start your knowledge about vibration analysis*

### Summary of topics

- **Maintenance practices:** Why we perform vibration analysis; also PM, PdM, and RCM.
- **Condition monitoring:** Learn about all the key technologies: IR, oil analysis, AE, and more.
- **Vibration:** What is it, what does it tell us about machine condition, what is a time waveform, what is a spectrum, and what are overall level readings.
- **Data collection:** Sensors, mounting methods, how to collect good data.
- **Spectrum analysis:** Forcing frequencies, introduction to the analysis process, harmonics and sidebands.
- **Diagnosing faults:** Unbalance, misalignment, bearing faults, and many more
- **Correction:** An overview of balancing and alignment.

### Duration:

4 days

Having successfully completed the course you will be eligible to take the certification exam [optional]

### Certification requirement:

Passing the certification exam  
6 months experience

### Language:

English [presentations, literature, and examination]

## ISO II Category II - Intermediate Vibration Analysis Course

*The key course for practicing vibration analysts*

### Summary of topics

- **Fundamentals:** Quick review [just in case you have forgotten anything]
- **Signals:** Learn where sidebands, harmonics, and beating come from
- **Data processing:** The FFT, averaging, windowing, resolution, Fmax.
- **Data collection:** Transducer types, mounting methods, mounting locations, recognising and avoiding measurement errors.
- **Spectrum analysis:** Forcing frequencies, the analysis process, harmonics and sidebands, setting alarm limits.
- **Advanced analysis:** Time waveform, phase and envelope analysis.
- **Diagnosing faults:** Unbalance, misalignment, bearing faults, looseness, resonance, and many other fault conditions.
- **Testing methods:** Introduction to bump tests, Bode plots, and ODS.
- **Correction:** Balancing and alignment.

### Duration:

5 days

Having successfully completed the course you will be eligible to take the certification exam [optional]

### Certification requirement:

Passing the certification exam  
18 months experience

### Language:

English [presentations, literature, and examination]

## ISO III Category III - Advanced Vibration Analysis Course

*For the masters of vibration analysis and those who wish to join their ranks*

### Summary of topics

- **Data processing:** Signal processing and advanced data collector features.
- **Time waveform analysis:** Detailed understanding of this essential tool.
- **Phase analysis:** Single-channel and cross-channel phase measurements.
- **Diagnosing faults:** Low speed, high speed and variable speed machines.
- **Dynamics:** Mass, stiffness, damping, natural frequencies.
- **Testing methods:** Bump tests, Bode plots, ODS, modal analysis, transient analysis and other methods.
- **Correction:** Balancing, alignment, damping, isolation, natural frequency.
- **Condition monitoring:** Managing a successful program.

### Duration:

5 days

Having successfully completed the course you will be eligible to take the certification exam [optional]

### Certification requirement:

Passing the certification exam  
36 months experience, CAT II certified

### Language:

English [presentations, literature, and examination]