

# Vibration Analysis: Category 3

## Vibration Analysis ISO Category 3

The **Mobius Insitute** Advanced Category 3 is for a candidate who is committed to reliability through condition monitoring, and who has at least two years vibration analysis experience.

It is ideal for those who lead a vibration team or take a pivotal role in diagnosing faults and making final recommendations. The candidate should understand all of the data collector options, special test capabilities, and analysis tools, and understand the widest range of fault conditions. This course will give the analyst all of the skills and knowledge necessary to solve all fault conditions, run a successful condition monitoring program and drive a reliability culture.

## Course Materials

- Pre and post online course online study
- Interactive assessments during the course
- 300-page course notes
- Short-form booklet
- Diagnostic mousepad
- VIA Certificate of Completion
- Mobius Certificate
- Mobius membership



## Course Description

**Duration:** 5.5 days training including optional 4-hour exam

**Hours:** Training Days: 1- 5 - 8.00am to 5.00pm  
Exam Day 6: 9:00am to 1.30pm

**Format:** Classroom learning

**Optional:** Certification examination, 4 hours, 70% passing grade

**Compliance:** Follows ISO 18436 -2 and 18436-3 and provides 3.5 Continuing Education Unit (CEU) credits

**Pre-Study:** Registered students are given access to the online version of the course via the Mobius Institute Learning Zone™ before the class and for four months after course completion to assist them with converting the course information into practice

**Certification Prerequisite:** Prior experience is not required for attending the training course, but certification requires 36 months of experience AND ISO Category 2 certification - or a minimum of 60 months experience in lieu of Category 2 certification.

**Outcome:** You will come away from this course with a complete understanding of vibration and phase analysis, dynamic balancing and shaft alignment, and a developing knowledge of machine dynamics and all condition monitoring technologies.

## Vibration Analysis Category 3 Certification

All VIA trained, Mobius™ certified analysts receive personalized logos with their certification number and name for their own professional use. Mobius Institute also maintains a listing of all certified analysts on our website and provides each analyst with a certification confirmation webpage.

For more information about Mobius Institute's accreditation, and the recognition of your certification by the ISO 18436 standard, please visit [www.mobiusinstitute.com/certification](http://www.mobiusinstitute.com/certification).



**Vibration Institute of Australia**

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## Course Summary

### Principles of vibration

- Very quick review of fundamentals
- Waveform, spectrum, phase, vectors and orbits
- Signals: transients, pulses, modulation, beating, sum/difference
- Force, response, damping, and stiffness
- Cepstrum analysis

### Data acquisition

- Planning routes, test locations and programs

### Signal processing

- Sampling, resolution, Fmax, averaging, windowing, dynamic range, signal-to-noise ratio
- A/D conversion: constant and variable sampling rate

### Vibration analysis

- Spectral, time waveform and envelope analysis

### Equipment testing and diagnostics

- Impact testing (bump tests)
- Phase analysis
- Transient analysis
- Operating deflection shape analysis
- Introduction to modal analysis
- Cross channel measurements

### Fault analysis in detail

- Natural frequencies and resonances
- Imbalance, eccentricity and bent shaft
- Misalignment, cocked bearing and soft foot
- Mechanical looseness
- Rolling element bearing analysis
- Analysis of turbo-machinery and sleeve bearings
- Analysis of AC, DC and variable frequency drives
- Analysis of gears and belt driven machines
- Analysis of pumps, compressors and fans
- Lots of case studies and exercises for participants

### Corrective action

- Balancing and shaft alignment
- Resonance control, isolation and damping

### Successful condition monitoring program

- Alarms, reports, management, finances

### Acceptance testing and ISO standards

## Public Course includes

### Course (& Materials)

5.5 day course

- 5 day classroom training
- plus optional 4 hour Certification exam

Optional online Learning Zone™ pre-study

Four month post course online Learning Zone™ resources

Diagnostic Reference Guide

Course Notes/ Manual

Lunches and refreshments during training days

## Registration

Visit <https://viaustralia.com.au/registration> to register or to request a quote.

For further information about our Vibration Analysis training contact Jennie at [jennie@viaustralia.com.au](mailto:jennie@viaustralia.com.au)

- public classroom courses
- tailored in-house training
- Mobius online courses

## About VIA

Clyde Volpe is the founder of VIA - the Vibration Institute of Australia, and is the **exclusive Mobius Training Partner** for Category 1, 2, and 3 Vibration Analysis public courses in the Australia/New Zealand region.

Mobius Institute awarded Clyde 'Instructor of the Century'. He has trained in over 30 countries, spanning 30 years to over 12,000 students. Clyde has a reputation for his energy, and his motivating and entertaining courses. With his hands-on experience, with the Mobius simulators, he has the ability of making the very complex easy to understand. His courses are designed to use vibration analysis to drive capability.

Contact Clyde at [clyde@viaustralia.com.au](mailto:clyde@viaustralia.com.au)



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