

# Vibration Analysis Training

## ISO Category III / ASNT Level 3

**Vibration Analysis Category III**

**27 - 31 May 2019  
Sydney, NSW**

The Vibration Specialist "Advanced" course is intended for personnel who have at least 36 months vibration analysis experience and a thorough understanding of vibration theory and terminology. The course provides an in-depth study of diagnostic measurement techniques and their associated applications.

It is expected that the attendee is either the leader of the vibration team, or takes a leading role in diagnosing faults and making the final recommendation.



This person must fully understand all of the data collector options, special test capabilities, and analysis tools; and must understand the widest range of fault condition.

This course will give the analyst all of the skills and knowledge necessary to solve all fault conditions, and to run a successful condition monitoring program.

### Course materials

- Pre-study materials iLearnvibration internet logon sent on registration
- interactive assessments during course
- 300 page course notes
- short-form booklet
- diagnostic mousepad
- certificate
- membership card

When you register for this course, you will receive the iLearnVibration pre-study internet logon. Prepare and you will succeed!

Our course utilises modern slides, animations, innovative simulations, and live case studies - all delivered by certified instructors.

You can take the optional certification examination. The training course and optional examination are accredited, providing certification by the Mobius Institute Board of Certification according to the ISO 18436-2 Category III standard, and the ASNT SNT-TC-1A Level 3 standard.



**Vibration Institute of Australia**

U4 5 Dickens Street  
Parkdale, Victoria, 3195  
Australia

clyde@viaustralia.com.au  
www.viaustralia.com.au  
mobile: 0417 41 6600  
tel: (03) 9587 1177

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### Course Summary

**27 - 31 May 2019**  
**Sydney, NSW**

**Venue - To be confirmed**



#### 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

### Course duration

The course consists of four and half days of training plus an optional 4 hour exam.

### Hours

Days 1-4: 8.00am to 5.00pm

Day 5: 8.00am to 5.00pm

Training + 4 hour Exam

### Fees

**Tuition & Materials** \$3530

5-day training  
 Pre-study materials  
 Diagnostic Reference Guide  
 Course notes

**Exam & certification** \$440

4 hour exam

Prices exclude GST

Lunches and refreshments included

See live simulators at:  
[www.viaustralia.com.au](http://www.viaustralia.com.au)  
 and [www.mobiusinstitute.com](http://www.mobiusinstitute.com)

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