

# Vibration Analysis ISO 18436-2 Category I-IV

VIBRATION ANALYST TRAINING  
& CERTIFICATION



[www.mobiusinstitute.com](http://www.mobiusinstitute.com)

# VCAT-I Vibration Analyst

## ISO 18436-2 Category I

Hone your abilities as a skilled vibration technician - capable of collecting quality data, and performing basic analysis and data validation—with advanced 3D animations and interactive simulations that make everything easy to understand.

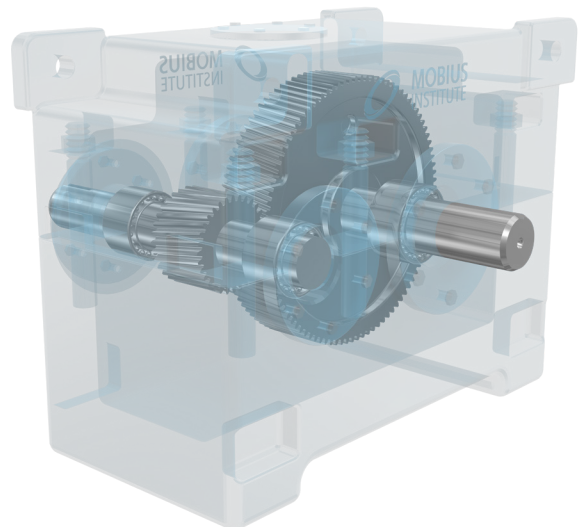
Welcome to the beginning of your vibration analysis journey. The good news is you are in the right place. Our VCAT-I ISO Category I course will set you up for success.

Once you complete the training, you can take the exam with confidence, and become certified to ISO 18436-2 Category I via the internationally respected Mobius Institute Board of Certification [MIBoC]. MIBoC certification is accredited to ISO/IEC 17024 - there is no higher standard. You will join thousands of other Mobius Institute certified analysts around the world.

### VCAT-I CANDIDATE PROFILE

This course is intended for the vibration analyst who will:

- Collect vibration data
- Validate that the data is good
- Begin to perform basic analysis
- Use the training and certification as the start of a new and rewarding career as a vibration analyst



# VCAT-I Vibration Analyst ISO 18436-2 Category I

## WHAT WILL YOU GAIN FROM TAKING THIS COURSE?

There are so many benefits to taking this course. You will learn...

- About condition monitoring, including a summary of the most common technologies
- About reliability improvement
- How vibration analysis plays a key role in reliability improvement
- How machines work via the supplementary self-study “equipment knowledge” section of the manual
- The fundamentals of vibration: waveforms, spectra, and simple metrics (overall levels, RMS, peak, peak to peak, and crest factor)
- How to take dependable, repeatable, high-quality vibration readings
- About vibration sensors, and how and where to mount them
- The basics of the analysis process, primarily with vibration spectra
- The basics of the key analyzer settings: Fmax, resolution, and averaging
- The basics of setting alarm limits
- The common “failure modes” of machines and how to detect them, including rolling element bearing faults, unbalance, misalignment, looseness, and resonance

## VCAT I FAST FACTS

### Duration:

30 hours, typically over four days

### Format:

- Live public course
- Private on-site course
- Virtual live online course
- Video distance learning online course

### Compliance:

- Training: ISO 18436-2
- Certification: ISO 18436-2, ISO/IE 17024

### Exam:

- 2 hours
- 60 multiple-choice questions
- 70% passing grade
- Can be taken online or in-person at the course

### Certification requirements:

- Training course completed
- 6-months of practical vibration analysis work experience, verified by supervisor/manager
- Pass the exam
- Valid for 5 years

### Pre-study:

- Access to the Learning Zone upon registration and payment. For online distance learning, access to the learning platform for four months from 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 accessing the Learning Zone for 4 months after completing your course. Plus, enjoy the option to upgrade to a 1-year Continued Education plan for extended learning
- Continue learning for free on [WWW.MOBIUSCONNECT.COM](http://WWW.MOBIUSCONNECT.COM) with online forums, webinars, tutorials, etc.





## TOPICS COVERED - CATEGORY I

### ➤ Maintenance practices

- Reactive, preventive, condition-based, proactive
- How to decide between them

### ➤ Condition monitoring

- Why it works
- Ultrasound, infrared, oil analysis, wear particle analysis, and electric motor testing

### ➤ Principals of vibration

- Waveforms
- Metrics: overall levels, RMS, Pk, Pk-to-Pk, and crest factor

### ➤ Introduction to vibration measurement

- Vibration sensors: displacement, velocity, acceleration
- Vibration units
- Mounting: where and how
- Naming conventions
- Repeatability and quality
- Vibration axes: V, H, A, R and T
- What are “routes” and how do you create them?
- Detecting and avoiding poor data

### ➤ An introduction to the time waveform

### ➤ An introduction to the spectrum

- An introduction to forcing frequencies

### ➤ A brief introduction to phase

### ➤ Signal processing (just the absolute basics)

- A quick tour of your analyzer settings
- Fmax
- Resolution
- Spectral averaging

### ➤ Vibration analysis

- The spectrum analysis process

### ➤ What is resonance - a quick introduction

### ➤ Diagnosing common fault conditions

- Unbalance
- Misalignment
- Rolling element bearing failure
- Looseness
- Resonance

### ➤ Setting alarm limits

