

VCAT-I Junior Vibration Analyst

ISO 18436-2 Category I

Learn to be an effective 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.

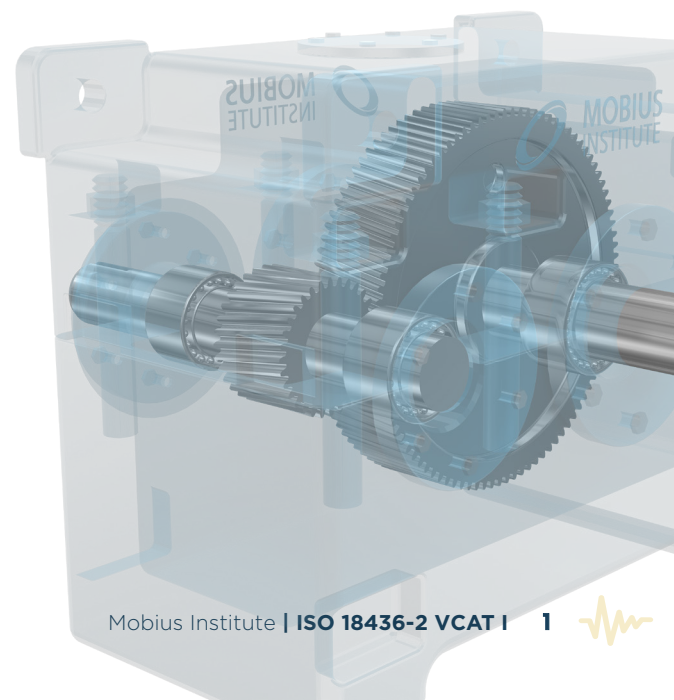
Welcome to the beginning of the vibration analysis journey. The good news is you are in the right place. Our VCAT-I ISO Category I course will set you up for success.

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]. The 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



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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
- About how machines work via the supplementary self-study “equipment knowledge” section of the manual
- About 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
- About 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
- On-site course
- Virtual online course
- Video distance learning online courses and Life Long Learning (LLL)

Compliance:

- Training and certification: ISO 18436-2
- Certification: ISO 18436-1, ISO/IEC 17024
- Training: ISO 18436-3

Exam:

- Two 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 work experience, verified by an independent person
- Pass the exam
- Valid for 5 years

Pre-study:

- Access to the “Learning Zone” upon 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 to access the Learning Zone for 4-months after the course, or upgrade your access for a lifetime with Life Long Learning (LLL).
- Continue learning, without charge, on MOBIUS CONNECT® via WWW.MOBIUSCONNECT.COM



TOPICS COVERED – JUNIOR ANALYST 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
- Principles of vibration
 - Waveforms
 - Metrics: overall levels, RMS, Pk, Pk-to-Peak, 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

