

Vibration Analysis ISO 18436-2

TRAINING AND CERTIFICATION

Vibration Analysis Category I

Vibration Analysis Category II

Vibration Analysis Category III

Vibration Analysis Category IV



www.mobiusinstitute.com

LEARN THE MOBIUS WAY

WHY LEARN WITH MOBIUS INSTITUTE™?

There are many reasons why over 8,000+ students choose Mobius Institute every year, and why you should, choose Mobius Institute for your vibration training and certification

- We make complex topics simple with amazing 3D animations and simulations that make you say, "Ah, now I get it!"
- We give you access to the entire course before the class begins so you are better prepared, and for six months after the course, just in case you still have questions.
- We use anonymous, stress-free polling throughout the course, so you know whether you truly understand each topic, and the instructor knows when to move on to the next topic - no student is left behind.



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WITH MOBIUS INSTITUTE™, YOU CAN *LEARN YOUR WAY.*

We offer the ultimate flexibility. See the course details for more information.



CLASSROOM INSTRUCTOR-LED COURSES

We have 200+ Training Partners in 115+ countries, offering 29+ languages.



VIRTUAL INSTRUCTOR-LED COURSES

Attend a virtual course - just like a live course, but you learn via GoToMeeting.



PRIVATE ON-SITE INSTRUCTOR-LED COURSES

Have the instructor come to your site to save your precious time and money.



ONLINE VIDEO COURSES

Traditional eLearning courses and iLearnReliability Learning Management System (LMS) courses

WHY BECOME CERTIFIED BY THE MOBIUS INSTITUTE BOARD OF CERTIFICATION™?



There are so many benefits to becoming certified:

- You should be recognized for your achievements; not everyone is up to the challenge of understanding vibration analysis, let alone successfully collecting data and utilizing it
- Being certified by an accredited certification organization is a major step up from simply passing a test. Yes, the process is a little more complicated and stricter, but that is for very good reasons
- The educational process is extremely valuable, but being certified tells an employer (or a consulting client) that you are capable of doing an important job

Mobius Institute has certified more vibration analysts than any other organization, and we have only been offering certification since 2005. Almost 65,000+ vibration analysts around the world, just like you, chose Mobius Institute.

You will receive a digitally encrypted certificate, an ID card, and a personalized logo that you should use in email signatures and elsewhere that you want people to know about your achievements.



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.

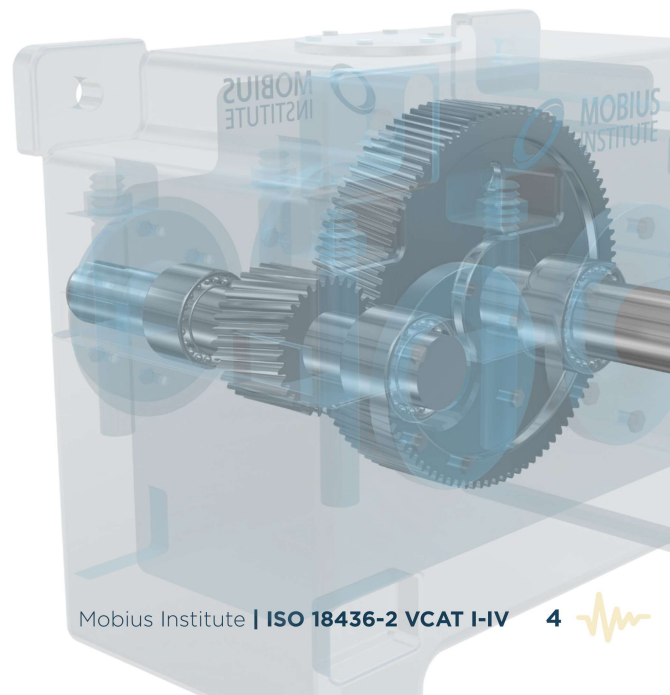
Welcome to the beginning of the vibration analysis journey. The good news is you are in the right place. Our VCAT-I ISO Category I course will set you up for success.

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



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



➤ **WILL I RECEIVE PRE-COURSE STUDY MATERIALS?**

Every registered student will receive an instructional email to finalize their course registration. They will also receive a link to their personal Learning Zone account. The account provides a digital version of the coursebook and also a series of folders containing movies. These movies are actual course videos, recorded in a studio, and contain the same content taught in the Instructor-led course the student is registered in. The Learning Zone account may be used for pre-course study materials, review during the course week, reference after the course, or used to re-take the course and re-sit your certification exam. The account is activated at the time the student registers for the course and expires 6 months after the close date of the course they will be attending.

➤ **MAY I TAKE ONE OF YOUR COURSES IF I AM NOT INTERESTED IN BECOMING CERTIFIED OR IF I HAVE INSUFFICIENT EXPERIENCE FOR CERTIFICATION?**

Yes, our courses are open to the public, regardless of experience. If you are involved in vibration analysis or rotating machinery in any capacity, such as sales, marketing, engineering, design, or reliability, you will come away with a far better understanding of how machines are monitored, how faults develop, and what can be done to determine what faults actually exist in a machine. All attendees receive certificates of completion. Candidates without sufficient experience will still receive a certificate if they pass the exam, but it will note that their experience was insufficient for ISO certification at the time.

➤ **AFTER I ATTEND YOUR COURSE AND TAKE THE EXAM, WHEN WILL I RECEIVE NOTIFICATIONS AS TO WHETHER I PASSED, AND WHEN WILL I RECEIVE MY CERTIFICATE?**

You will receive notification of your results 5-10 days after the exam has been received at our Australian office. If you have passed the exam and met all certification requirements, you will receive your Digital Certificate 10-15 days after your exam results notification email.

➤ **HOW LONG IS THE CERTIFICATION VALID?**

Vibration analysis certification is valid for five (5) years.

➤ **HOW DO I RENEW MY CERTIFICATION?**

We will endeavor to contact you before your certification expires, therefore it is important that you keep your TMS records up to date (TMS is the training management system you will use to register for the course and for certification). We recommend a best practice of utilizing a personal email address for certification communications, in case of a job change.



➤ **HOW DO I QUALIFY FOR RENEWAL?**

As per the standard, we do not require you to attend our conferences or take our courses, however, we hope you will take advantage of WWW.MOBIUSCONNECT.COM and the sites linked to MOBIUS CONNECT so that your knowledge remains current. These sites are free of charge. When it is time to renew your certification, we will ask you to nominate an independent person who can verify that you are still active as a vibration analyst. There will be a small fee to renew your digital certificate and to renew your certification status with the accreditation body.

➤ **WHAT ARE THE EXPERIENCE REQUIREMENTS FOR VCAT I?**

You must have six months of experience generally associated with maintenance, reliability, and vibration data collection. You will be asked to nominate an independent person who can verify that you have that experience.

➤ **WHAT ARE THE EXPERIENCE REQUIREMENTS FOR VCAT II?**

You must have 18 months of experience in vibration data collection and analysis. You will be asked to nominate an independent person who can verify that you have that experience.

➤ **WHAT ARE THE EXPERIENCE REQUIREMENTS FOR VCAT III?**

You must have 36 months of experience in vibration data collection and analysis. You will be asked to nominate an independent person who can verify that you have that experience. Certification to VCAT III also requires previous certification to VCAT II by a MIBoC approved certification body.

➤ **WHAT ARE THE EXPERIENCE REQUIREMENTS FOR VCAT IV?**

You must have 60 months of experience in vibration data collection and analysis. You will be asked to nominate an independent person who can verify that you have that experience. Certification to VCAT IV also requires previous certification to VCAT III by a MIBoC approved certification body.



Mobius Institute Board of Certification is an accredited certification body per ISO/IEC 17024 and ISO 18436-1 authorized to provide certification in accordance with ISO 18436-1 and 18436-2.

Mobius Institute Board of Certification (MIBoC) is an impartial and independent entity that is directed by scheme and technical committees to ensure that its certification meets or exceeds the requirements defined by the applicable International Organization for Standardization, ISO 18436 standards.



MOBIUS INSTITUTE is a worldwide provider of reliability improvement, condition monitoring and precision maintenance education to industrial plant managers, reliability engineers, and condition monitoring technicians. Our programs will allow plants to be successful in implementing reliability improvement programs through delivery of more easily understandable and comprehensive training of reliability and vibration analysis via public, in-plant and online education programs.

For more information about additional training courses, software tools, industry terminology and definitions, accredited certification, and specific course details, visit the Mobius Institute website.

www.mobiusinstitute.com

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MOBIUS CONNECT is your gateway to reliability and CBM videos, webinars, articles, tips, and a live feed and forum. You will connect with people, just like you, all over the world.

At MOBIUS CONNECT, you can solve problems, continue learning, and share your experience - all for free!

You must never stop learning.

