



## COURSES

### BASIC COURSE IN CONDITION MONITORING

GRK

The basic course in condition monitoring is intended for participants who have not previously worked with condition monitoring, or experienced people who are new users of equipment from SPM Instrument. During the course we will use the latest versions of Condmaster Ruby and Condmaster Entity Server, as well as the Leonova Diamond/Emerald handheld instruments, and an Intellinova Parallel EN emulator for users of online systems.

**Duration:** 2 days

#### COURSE CONTENT:

- ✓ Introduction to condition-based maintenance
- ✓ Shock pulse measurement
- ✓ Vibration measurement
- ✓ Choosing the correct measuring technique
- ✓ Measuring assignment settings
- ✓ Measuring point location
- ✓ Basic data analysis
- ✓ Practical demonstrations and exercises

## ADVANCED COURSE IN CONDITION MONITORING

PÅB

The advanced course is intended for participants who have worked with condition monitoring using SPM Instrument products for some time and who have basic knowledge of the subjects included in the basic course.

In the advanced course, we go deeper into how to configure measuring assignments to achieve the best results, the spectrum and color spectrum functionality in Condmaster, how to create a graphical overview, etc.

**Duration:** 2.5 days

### COURSE CONTENT:

- ✔ Advanced settings for measuring assignments
- ✔ Analysis of common machine faults
- ✔ Phase measurement with Leonova Dia/Eme
- ✔ Symptom management
- ✔ Color Spectrum
- ✔ Graphical Overview
- ✔ Alarm management

## CONDMASTER FOR ADVANCED USERS

CMA

Condmaster for advanced users is intended for experienced users of Condmaster Ruby, preferably users of online systems, although some functions are also applicable to handheld instruments. We go through old and new functions that enable even better data collection and analysis.

**Duration:** 3 days

### COURSE CONTENT:

- ✔ CES Admin Portal
- ✔ Machine Builder functionality
- ✔ Symptom management (cont. from Advanced course)
- ✔ Advanced features in Spectrum and Color Spectrum
- ✔ Condition View and Condition View Report
- ✔ Conditions, trigger functionality, and global values for online systems
- ✔ Entity Rules for online systems

## VIBRATION ANALYST ISO CAT I

CAT  
I

A basic course in vibration analysis. These courses are developed by Mobius Institute to which we are training partners. The course is completely theoretical and brand-independent, so no measurement system or software is used. For the ISO CAT courses, you can conduct an examination that upon successful completion, along with sufficient experience, gives a certificate.

**Duration:** 4 days (3 days course, 1 day examination)

### COURSE CONTENT:

- ✔ Maintenance practices
- ✔ Condition monitoring
- ✔ Principles of vibration
- ✔ Data acquisition
- ✔ Signal processing
- ✔ Vibration analysis
- ✔ Fault diagnosis and correction
- ✔ Setting alarm limits

# VIBRATION ANALYST ISO CAT II

CAT  
II

Level 2 of the vibration analysis courses is intended for participants with at least 18 months of condition monitoring experience. Participants must have a good knowledge of the basic theories that are covered in level 1.

**Duration:** 5 days (4 days course, 1 day examination)

## COURSE CONTENT:

- ✓ Principles of vibration
- ✓ Understanding signals
- ✓ Signal processing
- ✓ Time waveform analysis
- ✓ Data acquisition
- ✓ Vibration analysis process
- ✓ Diagnosing unbalance
- ✓ Balancing rotating machinery
- ✓ Diagnosing misalignment
- ✓ Shaft alignment
- ✓ Diagnosing looseness
- ✓ Belt drive analysis
- ✓ Rolling element bearing analysis
- ✓ Electric motor analysis
- ✓ Gearbox analysis
- ✓ Pumps, fans, and compressors
- ✓ Natural frequencies and resonances
- ✓ Setting alarm limits
- ✓ Acceptance testing

# VIBRATION ANALYST ISO CAT III

CAT  
III

Level 3 of the vibration analysis courses is intended for experienced vibration analysts with at least 2 years of documented experience. For certification, a previous CAT II certificate is required.

**Duration:** 5 days (4 days course, 1 day examination)

## COURSE CONTENT:

- ✓ Signal processing and data acquisition
- ✓ Time waveform analysis
- ✓ Phase analysis
- ✓ Dynamics (natural frequencies and resonances)
- ✓ Testing for natural frequencies
- ✓ Operating deflecting shape (ODS) analysis
- ✓ Modal analysis and intro to FEA
- ✓ Correcting resonances
- ✓ Rolling element bearing fault detection
- ✓ Journal bearing fault detection
- ✓ Electric motor testing
- ✓ Pumps, fans, and compressors
- ✓ Gearbox fault detection
- ✓ Corrective action
- ✓ Running a successful condition monitoring program
- ✓ Acceptance testing
- ✓ Review of ISO standards

## COURSE SKILL LEVELS

For an employee who begins their career in condition monitoring, we recommend that you complete the courses in the order shown below, but this is of course not a requirement.

