

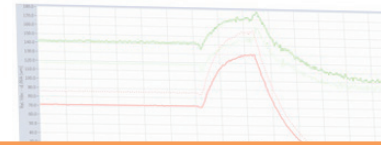
VESKI MONITORING ACADEMY

TRAINING COURSES – MEASUREMENT, DIAGNOSTICS AND DATA INTERPRETATION



Vibrations/ Typical Faults: RunOut (Slow Roll)

- RunOut – detectable at low rpm
- seen as 1x at low RPM (slow roll)



WHAT IS THE PURPOSE OF MONITORING ACADEMY COURSES?

Veski Monitoring Academy is a program to help our customers and all interested engineers improve both their understanding as well as the use of the data analysis process and machine behaviour in Machine Condition Monitoring.

Targeted audience are maintenance engineers and experts who will learn the concept and capabilities of modern Machine Condition Monitoring systems and their usage in predictive maintenance.

WHY SHOULD YOU ATTEND THE TRAINING COURSE?

Data analysis, data interpretation and estimates of Machine Condition often seem like a very complicated task. Extracting this valuable information from the measurement data is perceived as an impossible task - and end users often do not have the adequate training required to effectively master the data analysis software and data interpretation.

Our experts will help you in learning the key points in data analysis and interpretation. You will get the insight into theoretical background of vibro-dynamics and practical examples presented through various case studies including a wide range of problems. You will know exactly what you are looking for and how to correlate different signal types and recognize different patterns.

When problems occur, the monitoring software needs to be a reliable tool which will support the decision making process.

Course topics:

Concept and approach to modern Machine Condition Monitoring systems that combines various types of measurement such as:

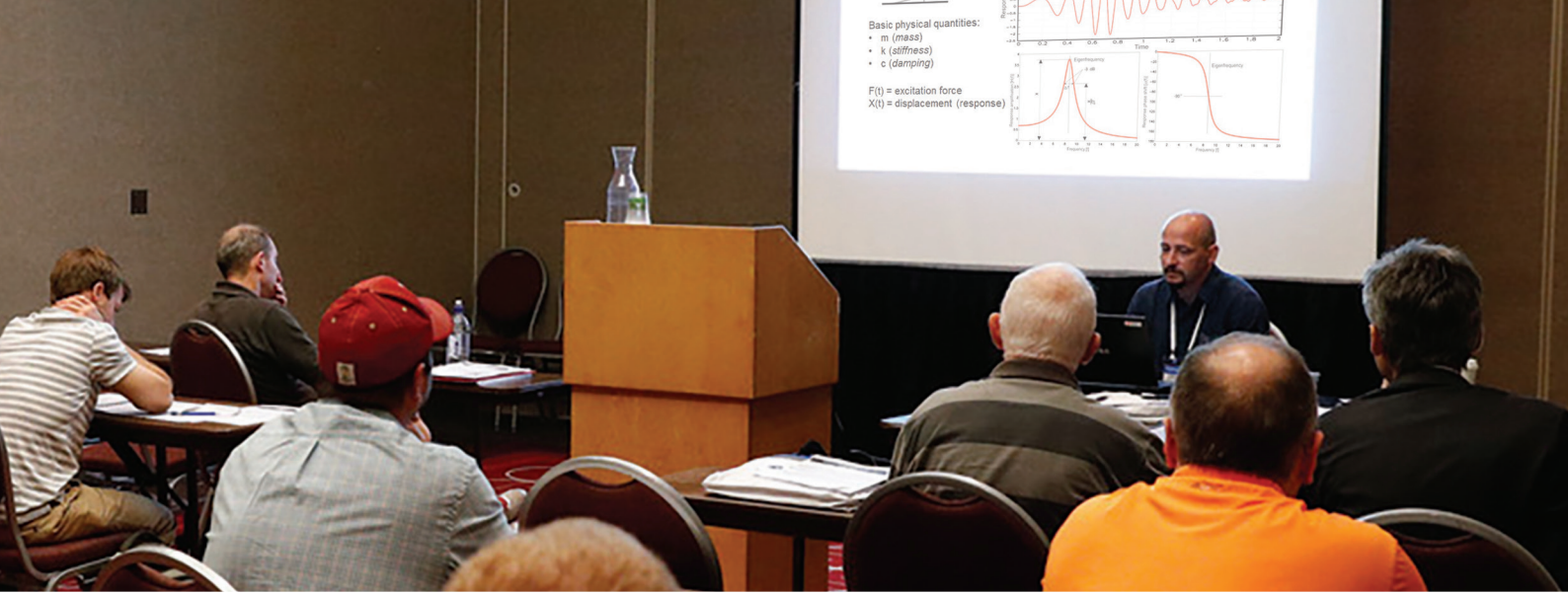
- Vibration monitoring (relative shaft and absolute bearing vibrations, axial displacements / vibrations)
- Air gap and magnetic flux monitoring (static and dynamic geometry of rotor and stator, rotor and stator shapes and dynamics)
- Monitoring of electrical quantities (Power quality, Load angle)
- Monitoring of hydraulic quantities (Rough zone detection, Pressure pulsations, cavitation, vibration turbine cover)

Machine design and maintenance based on Machine Condition Monitoring

Course benefit:

- Theoretical and practical knowledge of:
 - measurement and signal processing
 - vibration analysis
 - air gap analysis
 - monitoring electrical quantities (Power quality, Load angle)
 - monitoring hydraulic quantities (Rough zone detection, Pressure pulsations, cavitation, vibration turbine cover)
- Correlation between machine design and maintenance based on Machine Condition Monitoring





Course	Details	Duration
Info Seminar (freebie)	New developments and product info	4 hrs
Vibration diagnostics course	Basics of vibration measurements and signal processing Theory of vibration analysis Correlation between machine design and typical faults Data interpretation Case studies	1 day*
Air gap (and flux) diagnostics course	Basics of air gap (and flux) measurements and signal processing Theory of air gap analysis Correlation between machine design and typical faults Data interpretation Case studies	1 day*
Diagnostics course on complementary technologies (electrical, hydraulic and rotor monitoring)	Basics of electrical/ hydraulic/rotor monitoring, measurements and signal processing Theory of electrical/ hydraulic/rotor monitoring, and signal analysis Correlation between machine design and typical faults Data interpretation Case studies	1 day*
Custom tailored course	Combination of the above mentioned courses with custom tailored content	1 day

* It is possible to combine multiple one day courses into one single training. The total duration will depend on number of selected courses (e.g. 2 or 3 days)

Equipment used:

- DEMO **CoDiS-RT** monitoring processor
- DEMO ROTOR KIT – a model of generator with three slide bearings
- DEMO Modbus TCP communicator
- VIBRO SHAKER
- CoDiS PDS (Portable Diagnostic System) – a software capable of signal simulations

Targeted audience:

- Plant maintenance engineers,
- Plant managers,
- Plant technicians
- Plant and owner IT personnel
- Power generation experts
- Asset owners
- All engineers