

TECHNICAL TRAINING

Rotordynamics & Advanced Field Balancing

Promote your vibration analysis and diagnostics experience with advanced rotor-dynamics analytical knowledge to evaluate and solve complex machinery problems.



Scope

- Rotating machinery
- Turbo machinery



Course Duration

3 days
(18 hours)



Availability

- Customer site
- Classroom
- Online (Virtual)



Audience

- CbM engineers
- Vibration analysts
- Rotating equipment engineers
- Post-graduate researchers



Prerequisites

- Field work awareness
- Turbomachinery experience
- Vibration analysis experience (CAT III certification preferred)

Learning outcome

- Differentiate between forcing frequencies and rotordynamic faults
- Build an analytical model for rotor-bearing system
- Realize rotor manufacturing, repairs, and testing requirements
- Describe how kinematics of rotor affect the dynamics of the system
- Identify the dynamic interaction of lateral and torsional motion
- Estimate and compute torsional system resonances
- Interpret advanced onsite turbomachinery balancing data
- Recommend best design solutions for rotordynamics faults

What will you learn

- **Rotordynamics** – difference between rotordynamic & forcing dynamics analysis – historical overview – analytical modeling – journal bearing design – rotor-Bearing system modeling
- **Rotor Testing** – rotor types & manufacturing – inspection & repairs of rotors – high-speed rotor testing – rotor integrity
- **Rotordynamic Data** – purpose of rotordynamic analysis – Campbell diagram – mode shapes – critical speed map – undamped & damped response analysis – rotordynamic stability – rotordynamic standards
- **Lateral Vibration** – natural frequencies & resonances – cross-coupled stiffness – rotordynamic instability – asymmetric & anisotropic systems analysis – maintenance aspects
- **Torsional Vibration** – torsional resonances & mode shapes – torsional system modeling – transient effects & electrical disturbances – torsional vibration measurements – maintenance aspects
- **Advanced Balancing** – multiplane balancing – modal balancing – flexible rotor balancing – rotor thermal sensitivity – rotordynamics cross-couple effect – coupling balancing – high-speed balancing evaluation

#imagineZerofailure
aivibro.com

© 2021 Aivibro company, all rights reserved. All website material, brochures, technical documents, and digital information are copyright protected and owned by Aivibro company.

21 Victor Emanuel Square Right Wing, Office C38 Private WS, Smouha, Alexandria EG
Phone: +20-103-245-1619, www.aivibro.com

Nov-2021