SOUTHWEST RESEARCH INSTITUTE

Lateral & Torsional Rotordynamics for Centrifugal & Reciprocating Machinery

Southwest Research Institute
6220 Culebra Road • San Antonio, TX
October 22 – 23, 2024
Building 77, Training Room
Day 1: 8:00 a.m.-4:00 p.m. Day 2: 8:00 a.m.-4:00 p.m.

Course Overview

SwRI's introductory two-day in-person short course covers lateral and torsional rotordynamics, blade dynamics, vibration measurement, and balancing concepts, for engineers, operators, and technicians working on rotating machinery in the oil and gas and power generation industries. Instruction will be provided by experienced SwRI Machinery Department staff and will include fundamental principles, practical hands-on exercises, case studies, and machinery demonstrations.

Cost

The short course cost is $500 USD per registrant. Registration includes two days of course instruction, training materials, class exercises, and two lunches.

Course Topics

Lateral Rotordynamics

- Mass elastic model development
- Bearing performance
- Undamped critical speeds
- Lateral mode shapes
- Damped imbalance response
- Aerodynamic cross coupling
- Stability analysis
- Case studies

Torsional Rotordynamics

- Mass elastic model development
- Steady state critical speeds
- Torsional mode shapes
- Typical failure modes and modifications
- Forced response analysis
- Transient torsional analysis
- Torsional field testing

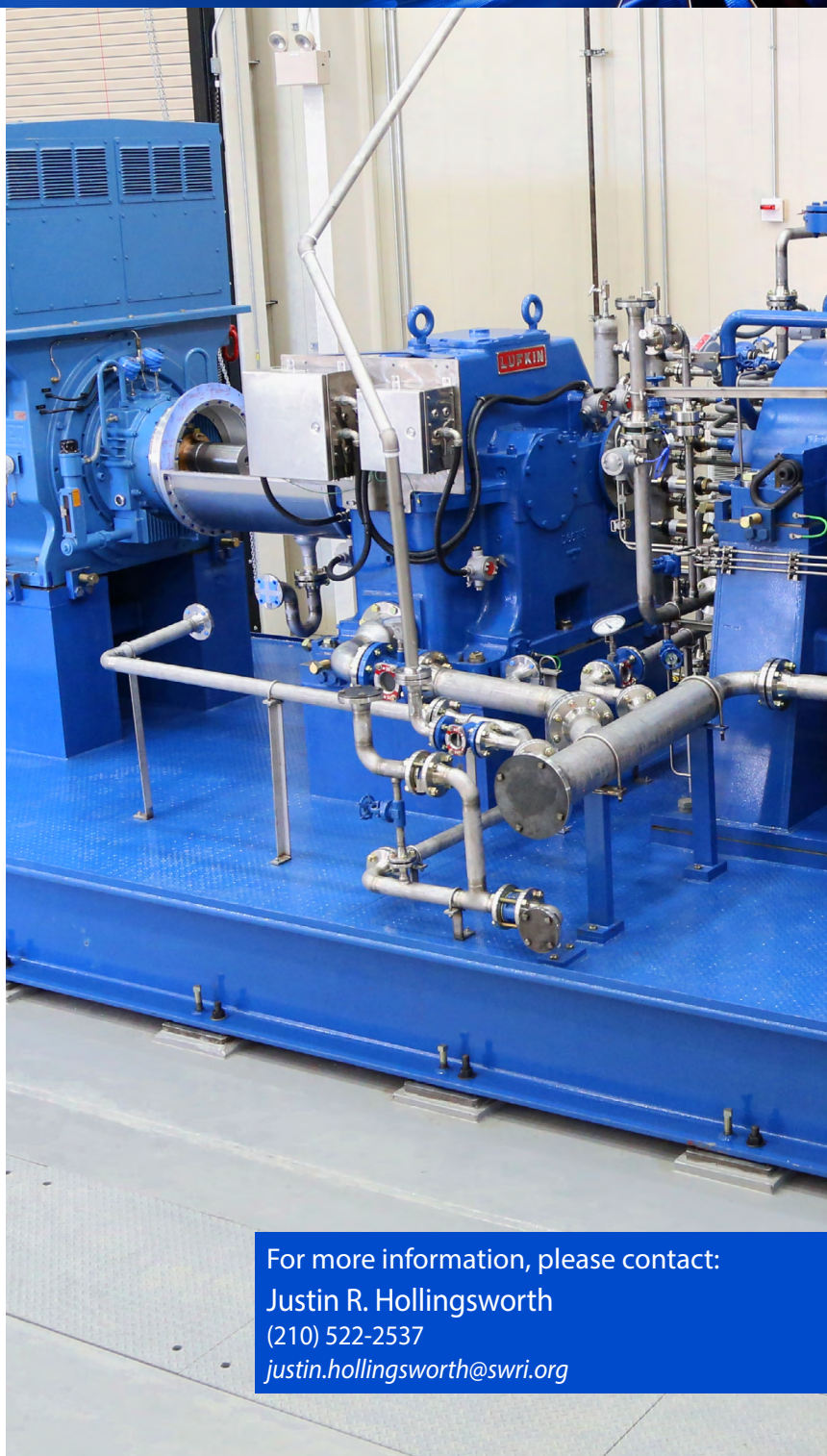
Hands-On Exercises

- Rotor vibration measurement
- Rotor balancing

Turbomachinery Blade Dynamics

Centrifugal Compressor Installation Visit and Instrumentation Overview

Field Vibration Measurements



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