

**Machinery Vibration Incorporated** provides Engineering Services to a broad range of industries. We supply Practical Engineering Solutions to improve performance and boost production.

Machinery Vibration Inc. (MVI) is a small group of engineering specialists focused on troubleshooting rotating machinery, fluid delivery systems, and mechanical component failures.

A valuable off-shoot of this troubleshooting work is MVI's **on-site short courses** that incorporate MVI's highly successful troubleshooting methods, experience and numerous case studies.

## SHORT COURSE

# Machinery Balancing

Machinery Balancing is a comprehensive short course dealing with every aspect of what it takes to control vibration on a variety of machines. This course has the breadth and depth required to significantly increase the abilities of seasoned field balancing technicians/engineers as well as provide a solid foundation for those just entering the field of machinery balancing.

This course is generally given on-site, saving you money in travel expenses. Furthermore, this course utilizes MVI's portable rotor test rig, which gives the class the opportunity to practice the balancing methods they've learned in a safe and controlled environment.

## COURSE CONTENT

### Day 1 : Introductory Balancing

- A basic mechanical vibrations primer
- Balancing definitions and concepts
- Vectors and phasors
- Sensors and equipment for balancing
- Basic assumptions for linear balancing theory
- Single plane balancing and the polar plot
- Single plane balancing without phase measurements
- Two plane balancing
- The static-couple method
- The influence coefficient method.

### Day 2 : Advanced Balancing

- Multiple-plane, multiple-speed balancing
- Flexible rotor and high speed balancing
- On-line, real time balancers and balancing methods
- Shop balancing
- Vibration and balancing standards
- Balancing using a computer code
- Integrating rotor modeling into the balancing procedure
- Practical aspects, case studies, and balancing pitfalls.

### Day 3 : Hands-on Applications

- Single plane and two plane balancing will be performed by the class on MVI's 2-disk flexible rotor test rig
- A variety of balancing methods will be explored, using different sensors in some instances to highlight the strengths and weaknesses of specific measurement techniques.
- Balancing using a computer

# MVi

Based in Cleveland, Ohio, the core of MVI's technical staff includes **Dr. Maurice L. Adams, Jr.** and **Dr. Michael L. Adams.**

Contact MVI via email at: [mla5@mvibe.com](mailto:mla5@mvibe.com)

For more information on our other services and courses, please visit our website at:

[www.mvibe.com](http://www.mvibe.com)

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