



4x Diagnostics presents:

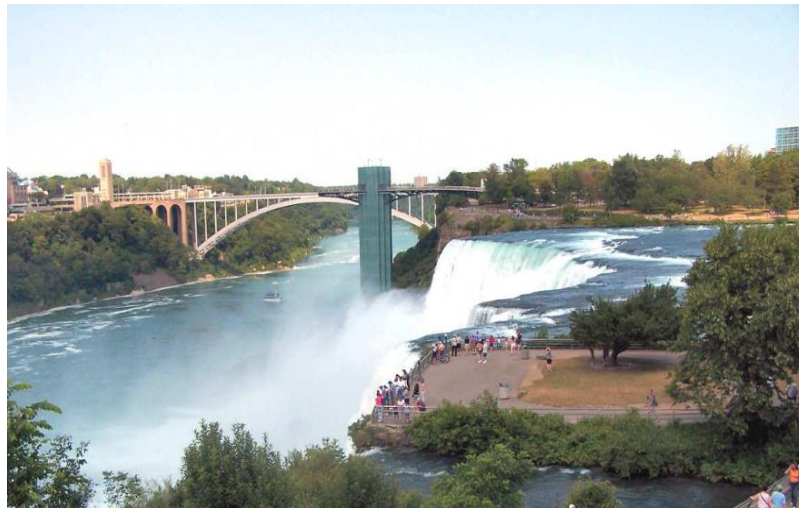
## “Practical Aspects of ODS & Modal Analysis Training”

And our newest course...

## “ME’scope VES Advanced Drawing Workshop”

in

Niagara Falls, NY.



Improve your vibration analysis skills, visualize machine and structure vibrations and better diagnose problems by watching a movie of the machine vibrating at forced or resonant frequencies.

## ME'scope Version 6.0 is out!

Don't forget to update your ME'scope software.

Operational Deflection Shape & Modal Analysis testing are powerful diagnostics tools that will help you analyze machine and structure vibration.

Our training is practical and easy to understand. We focus on the complete picture including test considerations, ODS & Modal measurements, the latest ME'scope software, data analysis and job reporting.

### ODS and Modal Analysis Training Course Information:

Join us in Niagara Falls, NY for Operational Deflection Shape and Modal Analysis Training.

<b>Course name:</b>	<b>Practical Aspects of ODS &amp; Modal Analysis Testing</b>
<b>Location:</b>	<b>The Conference Center, Niagara Falls, NY</b>
<b>Dates:</b>	<b>April 28 - May 2, 2014</b> ( <i>Monday – Friday noon</i> ) <b>Aug 25 – Aug 29, 2014</b>
<b>Instructor:</b>	<b>Tony DeMatteo, 4x Diagnostics, LLC</b>
<b>Price:</b>	<b>\$1700</b>

**Special Hotel Rate  
Available!**

[Ask for details](#)

#### **Course Description:**

This 4.5 day course teaches students how to do ODS and Modal Analysis testing using ME'scope software. After completing the course you will be familiar with the use of ME'scope software, the process involved in ODS and Modal testing and the types of data that must be collected. Each student will complete several ODS & Modal projects during the class.

#### **Course Outline:**

1. The decision making process – what goes into planning ODS and Modal testing.
2. Making ODS and Modal measurements (analyzer specific information may be available for your analyzer).
3. Using ME'scope software (drawing structures, numbering points, importing data, shape tables, animating the structure, curve fitting).
4. Interpreting ODS and Modal Analysis results.
5. Documenting test results.

## **ME'scope VES Advanced Drawing Workshop Course Information:**

Join us in Niagara Falls, NY for the ME'scope VES Advanced Drawing Workshop.

**Course name:** ME'scope VES Advanced Drawing Workshop  
**Location:** The Conference Center, Niagara Falls, NY  
**Dates:** June 9 – June 12, 2014 (Monday – Thursday noon)  
**Instructor:** Tony DeMatteo, 4x Diagnostics, LLC  
**Price:** \$1450

**Special Hotel Rate  
Available!**  
Ask for details

### **Course Description:**

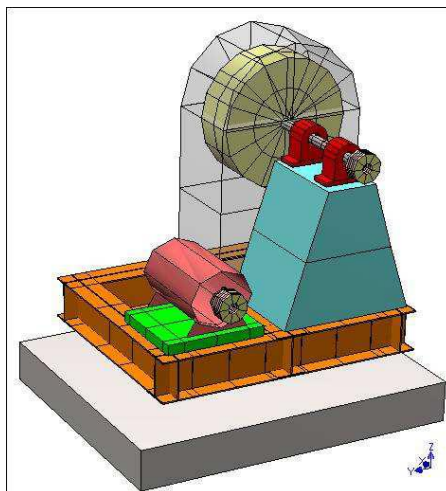
This 3.5 day course will improve students ability to draw advanced structures using ME'scope software. After completing the course you will be familiar with ME'scope structure drawing techniques, tips, tools and animation methods. Each student will be working with examples from several real job case histories from a variety of different industries.

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**Join us in Niagara Falls – home of the 7th natural wonder of the world. Call if you need more information about this course or if you are interested in any of our other public or on-site training courses, mentoring or diagnostic measurement consulting services.**

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Exhaust Fan ODS Structure Model



**View Frequency based ODS's here:**

<http://www.4xdiagnostics.com/Services/FrequencyBasedOperationalDeflectionShape.aspx>

**View Time Based ODS's here:**

<http://www.4xdiagnostics.com/Services/TimeBasedOperationalDeflectionShape.aspx>

**View Modal Analysis Surveys here:**

<http://www.4xdiagnostics.com/Services/ModalMovies.aspx>

## What we Provide:

1. Each student will be provided with a laptop and fully functional copy of ME'scope software to use in class during the training. You may bring your own laptop and ME'scope software if you wish.
2. Each student will keep a training course book.
3. Continental breakfast, lunch and afternoon snacks are provided each full day.

### Don't have ME'scope software?

4X Diagnostics is a ME'scope reseller. ME'scope makes ODS and Modal jobs easy.

**ME'scope VT-620 Visual ODS Software with 12 months of user support \$4,595**

**ME'scope VT-570 Visual Modal Software with 12 months of user support \$10,920**

Ask us for a quote to purchase ME'scope software or renew product support.

### Want a FREE TRIAL version of the product?

For more information on ME'scope software visit [www.4xdiagnostics.com](http://www.4xdiagnostics.com) and click on the Products tab.

### Special Pricing:

**\$400 off\*** course cost when you purchase ME'scope software.

**\$200 off\*** course cost when you upgrade your ME'scope software or renew support on your existing ME'scope product through 4X Diagnostics.

\* one discount per software purchase or support renewal.

### On-site ODS & Modal Training:

4X Diagnostics will come to you and provide ODS and/or Modal analysis training at your facility for 1–20 students. We can incorporate an ODS or modal survey of a problem machine at your plant as part of the training class. It's a great way to learn ODS testing and ME'scope software. Laptops with ME'scope software are provided for the training class. Ask for a quote.

For a course flyer, registration form and additional information about Niagara Falls hotels and attractions visit [www.4xdiagnostics.com](http://www.4xdiagnostics.com) and click on the Training Tab or contact:

Mary Ann

[maryann@4xdiagnostics.com](mailto:maryann@4xdiagnostics.com)

Office: 585-293-3234

Fax: 585-413-4370

[www.4xdiagnostics.com](http://www.4xdiagnostics.com)

Click here for more course information and a link to a printable registration form: <http://www.4xdiagnostics.com/TrainingPages/ModalODS.aspx>

**About your instructor:** Tony DeMatteo is a skilled analyst and technical training instructor with more than 35 years of experience. He is accomplished in vibration measurement and analysis, modal analysis, operational deflection shape testing, acoustics, dynamic balancing, transient capture, on-line monitoring and product defect analysis. Tony has experience in a wide range of industries and equipment and is Category IV certified.

**Definitions:**

**Operational Deflection Shape (ODS)** testing is a non-intrusive measurement technique used to analyze the motion of rotating equipment and structures during normal operation. An ODS is an extension of phase analysis. A computer generated model of the machine is animated with phase and magnitude data or simultaneously measured time waveform captures revealing the shape of the machine during normal operation. ODS testing is able to identify a wide variety of mechanical faults such as looseness, soft foot, broken welds, misalignment, unbalance, bending resonance modes, torsional resonance modes, structural weakness and foundation problems.

**Modal Analysis** is an experimental method of determining the natural frequencies, damping values and mode shapes of a structure. Modal analysis is needed when machine vibration is amplified due to resonance. A modal analysis involves a series of impact tests on an off-line machine. A computer generated model of the machine is animated with time or frequency domain data, revealing the shape of the machine at each natural frequency. Modal Analysis is the first step in correcting resonance problems.

**About 4X Diagnostics:** 4X Diagnostics provides vibration measurement and analysis consulting services, vibration training and mentoring services to manufacturing, technology and research industries.

We are accomplished in dual channel and cross channel vibration measurements, modal analysis, operational deflection shapes (ODS), phase analysis, shaft measurement, product defect analysis, online monitoring, torsional vibration, resonance testing, stress wave measurement, human body vibration exposure, floor vibration testing, noise measurements and route based vibration programs.

4X Diagnostics can explain vibration measurement and analysis techniques in a way that is easily understood and remembered. We provide classroom training and on-the-job mentoring ranging from basic vibration to modal analysis and operational deflection shape studies.

Tony DeMatteo  
4X Diagnostics, LLC  
405 Malloch Road  
Churchville, NY 14428  
office 585-293-3234  
mobile 585-750-6803  
fax 585-413-4370  
[www.4xdiagnostics.com](http://www.4xdiagnostics.com)

