

# Training M412 - Basic Agenda Maintenance and Troubleshooting

**GUIDED WAVE'S** Basic Maintenance and Troubleshooting course for the Model 412 analyzer is one day training for those who need to become familiar with the instruments basic operation. Both classroom and hands-on-lab activities are included. Classes are kept small for more one-on-one instruction, and are taught by knowledgeable experts, each with extensive professional experience at Guided Wave. Copies of all training materials are provided electronically. Please contact us for course price, dates and availability.

## Course Agenda Overview

### Analyzer Setup and Startup

- Host Computer Requirements
- Loading Software and First Time Configuration
- Loading the Analyzer
- Self Diagnostics and status
- Analyzer warm-up and wavelength calibration
- Reference (Zeroing) and Scanning

### LAB – Make it scan

### Spectroscopy Overview

#### Analyzer Class-PA Software Operation

- Connecting and Loading the Analyzer (review)
- Self-Diagnostics and status (review)
- Review all Software features and functions
- Event Log
- Help file

### I/O Communications and Setup

- IDistributed control systems
- Analog and digital discrete
- Modbus

### LAB - Spectrometer Hardware Overview and Parts Replacement

- Monochromator assembly
- Input modules
- ECM
- Power supply

### Probes and Fiber

- Students will review the internal workings and manufacture of various online probes and flowcells.

### LAB – Routine and Preventive Maintenance

- Changing the lamp
- Checking fiber connections/condition
- Cleaning Probes and Flowcells
- Zeroing (aka Referencing)

### DATA Protection!

- What to backup

### BASIC Troubleshooting

- Start Fresh!
- Event Log!
- Light Level?
- Probe Blind?
- Channel Fail

### LAB – Fix it!

### LAB - Fiber Optics Termination and Repair Demonstration

### Guidelines - Returning Components for Repair and RMAs

