

Liquid Analytical Instrumentation The Liquid Division of Rosemount Analytical offers the most complete range of analyzers, transmitters, and sensors for continuous on-line measurement of pH, ORP, conductivity, dissolved oxygen, ozone, chlorine, and turbidity. These products are used extensively in the chemical, food and beverage, power, mineral, petroleum, pharmaceutical, water and wastewater industries, and others. A dozen intensive courses, are taught by experienced instructors, providing the knowledge and skills for in-depth troubleshooting and maintenance of this important class of field instrumentation.

Conductivity Validation to Meet United States Pharmaceutical Water-for-Injection Requirements

Course 2200 CEUs: .7

Overview

This 1-day course provides a complete insight for complying to- USP WFI Conductivity Validation guidelines. Your choice of Conductivity Analyzer will be used in a hi-purity application mock-up so that students can perform:

- NIST calibration procedures for a complete loop
- NIST verification procedures for analyzers only
- be shown proper standard operating procedures that comply with USP regulations

The hands-on lab assignments will teach students to calibrate a Hi-purity loop using Standard Operating Procedures and good data recording methods. Upon completion, the students will be able to:

- explain/implement validation various strategies
- maintain a proper Analyzer/Cell certification program
- operate to NIST calibration standards

Topics

- Troubleshoot Hi-Purity Loop Problems Topics
- USP WFI Validation Strategies
- NIST Certification
- Hi-Purity Conductivity Measurement Theory
- Analyzer NIST Calibration Lab
- Maintenance & Troubleshooting

Price \$600

Location
Irvine, CA

Start Dates 2009
Call to schedule

Water Chemistry Essentials for Power Generation

Course 2201 CEUs: 1.4

Overview

This focused 2-day seminar provides an extensive education on steam power generating with regards to water quality issues. Learn how to protect Boiler and Turbine investments with proper water chemistry management. This course will address critical water chemistry measurements, the science behind the measurements, and any specific topics students' request. Progressing beyond the theoretical, this symposium offers practical solutions to the common measurement, instrumentation and documentation pitfalls. Upon completion, the students will be able to:

- explain the entire makeup water system
- explain the various steam cycles
- know where and why the critical water chemistry measurements are made
- recognize concerns in their own water systems
- avoid common pitfalls in the various water measurements
- evaluate solutions to common problems using latest technology and techniques
- avoid common pitfalls in the various water measurements

Topics

- Power Applications:
 - Makeup Water System
 - Various Steam Cycles
 - Critical Water Chemistry
- Wet Chemistry Measurements: (Silica, Sodium, Phosphate & Hydrazine)
- High-Purity pH Measurement
- High-Purity Conductivity Measurement: (Specific & Cation)
- Dissolved Oxygen Measurement

Price \$3,000

Location
Irvine, CA

Start Dates 2009
Call to schedule

General pH, Conductivity, and ORP Theory

Course 2202 CEUs: .7

Overview

This 1-day course provides a solid theoretical background in pH, Conductivity, and ORP measurements. Students will:

- understand how each measurement is made
- recognize installation/application problems
- learn configuration/calibrate procedures
- how to implement a maintenance program
- system diagnosis troubleshooting problems

Topics

- What is pH/Conductivity/ORP
- How pH/Conductivity/ORP Measurements are Made
- Physical Process Properties, Effects On-Line
- Proper Calibration Techniques
- Cleaning and Maintenance of a Sensor
- Choosing Correct Sensor for Any Process
- How to Decipher Diagnostics Readouts
- pH/Conductivity Sensor Overview
- pH/Conductivity/ORP Analyzer Overview

Price \$600

Location
Irvine, CA

Start Dates 2009
Call to schedule

Amperometric Measurement Theory: Chlorine, Dissolved Oxygen & Ozone

Course 2220 CEUs: .7

Overview

This 1-day course provides insight into the complicated amperometric measurements of Chlorine, Dissolved Oxygen and Ozone. Students will learn the concepts of how amperometric sensor work and how to calibrate each type of measurement. Students will:

- differentiate the various species of chlorine
- Dissolved Oxygen calculated/applied
- implement a proper maintenance program
- system diagnosis and troubleshooting

Topics

- Amperometric Measurement Theory:
- Chlorine/Dissolved Oxygen/Ozone
- Calibration Procedures for Each Meas.
- Maintenance & Troubleshooting Tips

Price \$600

Location
Irvine, CA

Start Dates 2009
Call to schedule

Rosemount Analytical Model 1055 Solu Comp II Analyzer

Course 2203 CEUs: .7

Overview The model 1055 dual-input-analyzer is dynamic in that it can process, display, and output measurements from two separate sensors. The model 1055 has the capability of accepting sensor inputs of the same type of measurement or two completely different types of measurements simultaneously. This course gives students an overview of the unique characteristics of the model 1055 analyzer. Students will learn to operate, install, and properly configure the model 1055 analyzer. Once completed students will be able to recognize typical installation problems, properly configure outputs/alarms, calibrate, and troubleshoot any on-line problems quickly.

NOTE: Formal classes must be accompanied with either course 2202, 2220 or 2200

Topics

- Installation and Application Problems
- Configuration of Outputs/Alarms
- Use Diagnostic Features (If Applicable)
- Calibration/Loop Troubleshooting

Price \$600

Location
Irvine, CA

Start Dates 2009
Call to schedule

Rosemount Analytical Model 5081 HART & FOUNDATION™ fieldbus Transmitter

Course 2212 CEU's: .7

Overview The model 5081 transmitter has the ability to communicate with either HART or FOUNDATION™ fieldbus communication protocols. The explosion proof enclosures gives operators the ability to view the process variables in harsh environments. Students get an overview of all the options available on the model 5081 transmitter. Students will learn to operate, install, and properly configure the model 5081 transmitter. Students will be able to recognize typical installation problems/properly configure the output and diagnostic variables calibrate/troubleshoot any on-line problems quickly.

NOTE: Formal classes must be accompanied with either course 2202, 2220 or 2200

Topics

- Installation and Application Problems
- Configuration the Output (If Applicable)
- Use Diagnostic Features (If Applicable)
- Calibration/Loop Troubleshooting

Price \$600

Location
Irvine, CA

Start Dates 2009
Call to schedule

Rosemount Analytical Model 54e Analyzers with Advanced Predictive Sensor Diagnostics

Course 2210 CEUs: .7

Overview

The model 54e analyzer is extremely useful when communication and/or control of the process is vital. Using HART communication protocol, the model 54e analyzer can give the operator a complete analysis of the process at any in-line workstation. The PID option makes the 54e analyzer one of the most powerful individual controller on the market today. This course gives students an overview of all the options available on the model 54e analyzer. Students will learn to operate, install, and properly configure the model 54e analyzer. Once completed students will be able to recognize typical installation problems, properly configure normal outputs/alarms, calibrate, and troubleshoot any on-line problems quickly.

NOTE: Formal classes must be accompanied with either course 2202, 2220 or 2200

Topics

- Installation and Application Problems
- Configuration of Outputs/Alarms
- Use Diagnostic Features (If Applicable)
- Calibration
- Loop Troubleshooting

Price \$600

Location
Irvine, CA

Start Dates 2009
Call to schedule

Rosemount Analytical Model Xmt HART & FOUNDATION™ fieldbus Transmitter

Course 2214 CEUs: .7

Overview

The model Xmt transmitter has the ability to communicate with either HART or FOUNDATION™ fieldbus communication protocols. Using the model 375 HART communicator or the local seven-button keypad allows operators to easily program and calibrate the model Xmt transmitter. At the completion of this class students will have a clear overview of all the options available on the model Xmt transmitter. Students will also be able to recognize typical installation problems and perform proper configuration for commissioning the transmitter quickly. Students will also learn how to use the on-line diagnostics to troubleshoot problems or predict problems before they happen.

NOTE: Formal classes must be accompanied with either course 2202, 2220 or 2200

Topics

- Installation and application problems
- Configure the outputs (if Applicable)
- Use Diagnostic Features (if Applicable)
- Calibration
- Loop Troubleshooting

Price \$600

Location
Irvine, CA

Start Dates 2009
Call to schedule

To enroll in Liquid Analytical courses please call 800-854-8257 ext. 8533. For additional contact information refer to the appropriate contact on page 119. Updated dates & locations are available on our website at www.emersonprocess.com/education.