

Z121 Process Analyzer MD/CD Utilization

Course Description



Course Duration

The duration is 5 days if tuning control loops is the objective or 3 days (first 3 days of the course) if MD analysis for results projections is the objective.

Course Goal

The goal of this course is to teach students the skills needed to analyze, troubleshoot, tune, and generate a report for machine direction or cross direction controls.

Student Profile

The 5 day training is targeted to engineers using the tool for MD tuning.

The 3 day training is targeted to engineers planning to analyze MD variations for results projections.

Prerequisites and Recommendations

Students should have an operational knowledge of the process and control systems and have attended the Z120 course. The Z105, C100, and C110 courses are highly recommended.

Description

In this course, students will learn about the use of the MD and CD Process Analyzer software for control utilization.

Course Objectives

Upon completion of this course, students will be able to:

- Predict variability reductions
- Identify the spectral content of the signal

- Check the tuning of a control loop
- Identify the process model
- Retune a control loop
- Generate a report for results, surveys, or utilization.
- Simulate the automatic setpoint and load change responses.
- Apply signal filters and digitally resample a data set.

Main Topics

- Data Processing
- Statistics
- Fourier Series Analysis
- Identification
- Tuning
- Report setup
- MD Simulation



Course Calendar

Day 1	Day 2	Day 3	Day 4	Day 5
<ul style="list-style-type: none"> • Course Introduction • Program Information • MD File Setup • Purpose of Tabs • Analysis Setup • Main Menu Options <ul style="list-style-type: none"> • Copy • Paste • Print • Export • Graph Options • Statistical Analysis • Lab 	<ul style="list-style-type: none"> • Review – Q/A • Fourier Transform • Cutoff Period • Covariance • Amplitude Spectrum • Bode Plot • Lab 	<ul style="list-style-type: none"> • Review – Q/A • Process Identification • MD Simulator • RMS • Lab 	<ul style="list-style-type: none"> • Review – Q/A • CD File Setup • Descriptive Statistics • Profile Stability • Variability <ul style="list-style-type: none"> • MDL • MDS • CD • TOT • 3-D graphs <ul style="list-style-type: none"> • Histogram • Power Spectrum • Correlation • Covariance 	<ul style="list-style-type: none"> • Review – Q/A • Descriptive Identification • Actuator Threshold • Filtering • Resampling

