Course Description
80% to 90% of problems with Process Analyzers can be attributed to the sample conditioning system. The course starts by defining the system requirements and the problems that stand in the way of achieving them. Since every segment of the installation affects the reliability and accuracy of our analysis we then proceed with discussing in detail the complete system, starting with how the process can cause problems. After a review of hardware and the principles of phase preservation, we are given the rules for proper conditioning and how to keep the sample in a single phase and avoid contamination during sample conditioning or multiple stream analysis. Actual conditioning hardware and hands-on exercises are used to reinforce the learning process.

Duration
4 days / 2.5 CEUs

Objectives / Outcomes
Upon completing the course, the learner will be able to exhibit the ability to identify:
- The six requirements that all Analyzer systems must meet
- Process tap location and design
- Why gases condense and what to do about it:
  - pressure and temperature effects
- Sample conditioning hardware
- Vaporization difficulties:
  - response time and wide boiling mixture problems
- Principles of multi-stream switching
- And evaluate the transport line:
  - two types of systems
  - estimating and resolving lag in installed lines

Intended Audience
All personnel who operate and maintain Process Analyzers as well as those who have to use the results. This may include analyzer engineers, plant instrument engineers, lab managers and plant chemists, maintenance supervisors and technicians, and anyone else associated with process analyzers.

Course Prerequisites
There are no prerequisites for this course. However, prior knowledge of process analysis and basic electronic circuits will accelerate the learning process.

Technical requirements
- Prior exposure to process analysis
- Knowledge of electronic circuitry and chemical reactions will accelerate the learning process

Materials
Each learner will be provided with the appropriate electronic course workbook.

Requirements to Be Awarded CEUs
- Submit completed course Registration Form
- Fulfill financial obligations
- Fulfill the 90% attendance requirement by signing-in each day of facilitated course
- Fulfill the 70% or above overall scoring requirement on labs and projects

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