

INDUSTRIAL PROCESS INSTRUMENTATION (REF:OTSIP1001)

Course Objectives

To gain a detailed understanding of the measuring equipment.

Course Description

This course will cover the practical application of process control techniques including basic and advanced regulatory control strategy selection, implementation and tuning or optimum process benefit.

Who Should Attend

This course is targeted at electrical technicians.

Pre-Requisites

All Attendees should have a sound power generation and electrical background.

Course Outcome

At the end of this course you will be able to understand instrumentation.

Course Outline

Day 1

Introduction

Instrumentation Introduction

Background
Benefits of control
Incentives for control
Symbols and terminology

Day 2

Process Characteristics

Steady State Response
Effect of disturbances
Dynamic response
Process gain
Lag
Dead time
Order
Approximate response
Linearity

Day 3

Control Loop Characteristic

Flow loops
Temperature loops
Pressure loops
Level loops

Day 4

Feedback Control

On/Off Control
Modulating control
Proportional mode
Integral mode (Reset)
Derivative mode
Commercial PID
Digital control algorithms



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Day 5

Feedback Controller Tuning

Tuning criteria
Trail and error/tuning
Open loop tuning
Closed loop tuning
Improving "as found"
Practical guideline
Adaptive tuning

Course Review and Feedback

