ABB PGC Basic 5000 Training Course Synopsis
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Course type and Goal

This is an instructor led course with interactive class room discussions, presentations, and practical exercises.

This course will cover Theory, Operation and Maintenance of Gas chromatographs and sample conditioning systems

This course provides knowledge of the functional capabilities of ABB Gas chromatographs PGC 5000

Learning Objective

Upon completion of this course the participants will be able to,

- Understand Basic Gas chromatography.
- Different parts of Gas chromatograph.
- Understand PGC 5000 Operation
- Identify PGC 5000 MC & Oven hardware components
- PGC 5000 startup.
- Collect PGC 5000 backup.

Prerequisite

Students attending this course should have basic knowledge of gas chromatography

Course Duration

The duration is 3 days
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Day 1

- **Basics of Gas chromatography.**
  - What is Gas chromatograph?
  - Function of Gas chromatograph.
  - Why Chromatograph is required.

- **Parts of a Gas Chromatograph.**
  - Carrier Gas.
  - Flow/Pressure Control
  - Sample Injection.
  - Column – The Heart of a GC
  - Detectors.
  - Output Device

- **Different types of carrier gas used in PGC 5000.**
  - Helium.
  - Nitrogen.
  - Hydrogen.

- **Cylinder pressure regulator.**
  - Carrier pressure cylinder.
  - Calibration cylinder.
  - Regulator types.
  - Single stage Regulator.
  - Dual stage regulator.

- **Career pressure transport line.**

- **Different type off injection valve used in 5000.**
  - Liquid sample injection valve. (LSV)
  - M2CP /Slider valve.
  - Diaphragm valve.
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- Function of columns.
- Different types of columns used in PGC 5000.
  - Packed columns.
  - Capillary columns.
  - Temperature Effect on column.
  - How separation takes place.
  - Importance of columns in gas chromatograph
  - Carrier Flow Effect on column.
  - When column do not work.
  - Manufacture’s recommendations.
- PGC 5000 Series analyzer System.
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- Different types of detectors & Theory of operation

- TCD (Thermal conductivity Detector)
  - STCD (Single Thermal Conductivity Detector)
  - MTCD (Multi port Thermal Conductivity Detector)

- FID (Flame Ionization Detector)
  - FID spare details.
  - Maintenance & overhauling.

- FPD (Flame Photometric Detector)
  - FPD spare details.
  - Maintenance & overhauling.
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Day 2

- Study of PGC menu
- Explanation of Main TABs & Sub TABs
- Analyzer status messages & Errors
- Home tab.
- Status Tab.
- Schedule Tab.
- Set up Tab.
- Analysis tab.

- History of results and chromatographs
- Configuration of PGC 5000
- Editing of analysis/method.
Day 3

PGC 5000 Hardware.

- Master controller.
- Detailed study of Master controller.
- Hardware electronics.
- SBC Details.
- DCS interface ports.
- Network interface ports and configurations.

Oven Electronics.

- Detailed study of Oven's.
- Different Hardware electronics components.
- Daily routine checks for Oven chromatographs.

Oven Electronics Overview
Training Fees / Terms & Conditions

Course Fee :

Course Duration :

Training Location :
  - Tuition accommodates minimum 6 to maximum 10 students per class
  - Comprehensive colored printed Training Manuals are included at no extra charge

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