Gulf Bio Analytical

TRAINING CALENDAR 2019

Basic to Advanced Laboratory Courses in Analytical Chemistry

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▪ SYSTEMS ▪ CONSUMABLES ▪ SERVICES ▪ PROJECTS

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Gulf Bio Analytical

INTRODUCTION

• Vision

Contributing to the Scientific Knowledge of Society

• Training

The GBA training center is where many scientists have come to advance their careers through a wide variety of GBA Professional Training Courses. The courses are held in a modern training facility and its structure is designed to provide enough classroom discussion to fully understand the scientific principles behind the instrumentation and techniques.

In addition, a large part of the course takes place in the laboratories with direct hands-on instrumental training. All courses are facilitated by highly trained Specialists who are experts in their respective fields.

At GBA, you can find a wide range of learning options to meet the needs of your lab, optimizing productivity on your new or existing equipment. GBA academy help by partnering and collaborating with you and your team to meet the requirements and desired outcome you seek.

We deliver:

- Innovative insights into instrumentation, software, and consumables.
- World class training, method, and application services when and where you need it.

• The Value of Education

The goal of GBA Education is to accelerate productivity and increase expertise in the laboratory. We offer several services tailored to your needs including:

- Formal classroom training at an GBA site
- Customized training at your site
- Application consulting in your laboratory

Investing in a training program expedites the productive use of your new or existing instrument. Your training investment will be rapidly returned in productivity gains.

TRAINING COURSES - INDEX

Our Vendors

Agilent Technologies

Metrohm

TA Instruments

BRUKER

Agilent Technologies

GC

Gas Chromatography

DAY 1

- Introduction to new GC technologies
- Fundamentals of column separation
- Overview of OpenLAB CDS Software
- Std/Sample injection
- Capillary column cutting, installation to Inlet and different Detector, running samples
- Q & A session

DAY 2

- Inlets, Fundamentals of S/SL inlets
- Gas Sample Introduction by Valves
- Fundamentals of Detectors - FID & TCD
- Std/Sample injection & data acquisition
- Hardware details of S/SL inlet, Valves and FID/TCD Detectors.
- Q & A session

DAY 3

- Introduction to OpenLAB-Control Panel
- Networking multiple GCs for remote access & central management
- Create & develop a method
- Std/Sample injection & data acquisition
- Optimizing integration
- Q & A session

DAY 4

- Calibration, recalibration & multi-level calibration
- Introduction to Sequence, easy Sequence
- Intelligent Reporting & advance features.
- Common chromatographic problems & troubleshooting
- Knowledge Quiz
- Handover: Training Certificates & Training Material
- Q & A session

To know more: contactus@gulfbioanalytical.com

Agilent Technologies

HPLC

High Performance Liquid Chromatography

DAY 1

- Agilent Infinity Series Solutions for Liquid Chromatography
- Introduction & major components of LC 1200 Series
- Overview of LC OpenLab CDS Software
- Networking multiple LCs for central management & remote control
- Lab Session
- Advance Operations - Lab Advisor Software
- Q & A session

DAY 2

- Introduction to new 1290 Infinity II LC
- Basic design and operation
- Pump & Degasser
- Auto Sampler & Thermostatic auto sampler
- Detectors – VWD, DAD, FLD, MSD
- Column types and various applications
- Lab Session
- OpenLAB CDS configuration & communication
- Q & A session

DAY 3

- Developing a method, creating a sequence & acquire LC data
- Optimize integration, calibrate data & preview classic report
- Compliance with 21CFR Part11
- Data Security, Data Integrity & Data Traceability
- Lab Session
- Reprocess workflow – recalculate with current/specific method
- Q & A session

DAY 4

- Intelligent Reporting engine and Sequence Summary templates
- LC maintenance & troubleshooting – Lab Advisor Software
- LC Startup/Shutdown procedures
- Knowledge Quiz
- Handover: Training Certificates & Training Material
- Q & A session

GC Analyzer

Gas Chromatography Analyzer

DAY 1

- Introduction to GC, GC Analyzers.
- Fundamentals of column separation
- Inlets, Detectors, Valves.
- Lab visit and demo
- Capillary column cutting, installation to Inlet and different Detectors, running samples
- Q & A session

DAY 2

- Fundamentals of column separation
- Gas Sample Introduction by Valves
- Fundamentals of Analyzers
- Std/Sample injection & data acquisition
- Hardware details of S/SL inlet, Valves and Detectors.
- Lab visit and demo
- Q & A session

DAY 3

- Introduction to Openlab and Chemstation software
- Create & develop a method
- Calibration, recalibration & multi-level calibration
- Analyzers training.
- Different types of Analyzers- RGA, NGA, SP1 solutions
- Q & A session

DAY 4

- Common chromatographic problems & troubleshooting with Analyzers.
- Maintenance of Various Analyzers.
- Complex Analyzer solutions
- Troubleshooting and Hands on sessions.
- Q & A session

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Agilent Technologies

LC MS/MS

Triple Quadrupole Liquid Chromatography Mass Spectrometry

DAY 1

- LC MS/MS Theory
- Agilent QQQ System Overview
- Ionization and Sources
- Q & A session

DAY 2

- Mass Tuning and Calibration
- HPLC Methods and Columns
- CID
- Method Development and Optimization from MS scan to MRM
- Q & A session

DAY 3

- Mass hunter Acquisition
- MRM, DMRM and tMRM method
- Mass Hunter Quantitative Analysis
- Introduction to Agilent tMRM data base
- Q & A session

DAY 4

- Mass Hunter Quantification Basics
- Advanced Quantification
- Maintenance and Troubleshooting
- Q & A session

Agilent Technologies

GC MSD

Gas Chromatography Mass Spectrometer Detector

DAY 1

- GC-MS Principles
- GC-MS Instrument Overview
- Column Installation Demonstration
- Demonstration of GC-MS Readiness
- Detailed Function of GC-MS Components
- Tuning Principle
- Demonstration of Auto Tuning
- Sleep & Awake Functions
- Q & A session

DAY 2

- Demonstration of Various Methods
- Demonstration of Scan Acquisition
- Qualitative Analysis
- Library Matching
- Scan to SIM Conversion
- Demonstration of SIM Acquisition & Optimization
- Analyzing Standards for Calibration
- Demonstration of NIST Library Matching
- Q & A session

DAY 3

- Calibration & Quantitative Analysis
- Quantitative Analysis Reporting
- Recalibration Demonstration
- Consumables Management
- Deconvolution
- Q & A session

DAY 4

- GC MS/MS Shut down Demonstration
- GC MS/MS Startup Demonstration
- Do's & Don'ts of GC MS/MS
- Maintenance/Cleanup Guidelines
- Q & A session

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Agilent Technologies

GC MS/MS

Triple Quadrupole Gas Chromatography
Mass Spectrometer Detector

DAY 1

- GC MS/MS Principles
- Differences between GC-MS & GC MS/MS
- GC MS/MS Instrument Overview
- Column Installation Demonstration
- Demonstration of GC MS/MS Readiness
- Detailed Function of GC MS/MS Components
- Tuning Principle
- Demonstration of Auto Tuning
- Q & A session

DAY 2

- Demonstration of Various Methods,
- Sleep & Awake Functions
- MS2 Scan Acquisition
- Product Ion Scan
- Optimization of Collision Cell Parameters
- Multi Reaction Monitoring Acquisition
- Analyzing Standards for Calibration
- Demonstration of NIST Library Matching
- Q & A session

DAY 3

- Calibration & Quantitative Analysis
- Quantitative Analysis Reporting
- Recalibration Demonstration
- Database Method Extraction
- Optimization Assistant
- Deconvolution
- Q & A session

DAY 4

- GC MS/MS Shut down Demonstration
- GC MS/MS Startup Demonstration
- Do & Don'ts of GC MS/MS
- Consumables Management
- Maintenance/Cleanup Guidelines
- Q & A session

MP – AES

Microwave Plasma -
Atomic Emission Spectroscopy

DAY 1

- Basic Atomic Spectroscopy
- MP-AES Hardware Basics
- Safety Practices
- Method Development
- Instrument set up and calibration
- Sample Analysis
- Q & A session

DAY 2

- MP-AES Hardware and Accessories - Nitrogen Generator, EGCM, MSIS etc.,
- MP Expert Software and Optimization
- Background Correction Fast Linear Interference Correction (FLIC)
- Q & A session

DAY 3

- Interferences & Corrections
- Analysis Considerations
- Detection Limits (DL), Method Detection Limits (MDL), Minimum Limits (ML) and Linear Analytical Range (LAR)
- Q & A session

DAY 4

- MP-AES Troubleshooting and maintenance
- MP Expert Applets
- Preventive Maintenance and Troubleshooting exercises
- Running QC Tests
- Q & A session

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Agilent Technologies

FTIR

Fourier Transform Infra-Red Spectroscopy

DAY 1

- FTIR Basic Principles and Theory
- Cary 630 Overview
- Cary 630 Applications Overview
- Sampling Techniques and Accessories
- Q & A session

DAY 2

- MicroLab software and Method Editor
- Spectral Libraries and Spectral Analysis
- Quantitative Analysis
- Troubleshooting and Maintenance
- Q & A session

Agilent Technologies

ICP – MS

Inductively Coupled Plasma Mass Spectrometry

DAY 1

- ICP-MS Principles and Operation
- Fundamentals of ICP-MS and Agilent ICP-MS Design Features
- MassHunter Software for Agilent ICP-MS Set up/Start up
- ICP-MS Tuning
- Laboratory: Set up and Tuning
- Q & A session

DAY 2

- ICP-MS Interferences
- Octopole Reaction System (ORS)
- MassHunter Acquisition Methods and Sequences
- Laboratory Acquire a Simple Mass Spectrum
- Laboratory Multi-Tune Method and Sequence
- Q & A session

DAY 3

- Data Analysis Methods and Principles of Quantification for FullQuant Mode
- Laboratory Data Analysis Set up and Evaluation
- MassHunter Analysis Capabilities
- Intelligent Sequencing for MassHunter
- Q & A session

DAY 4

- Agilent ICP-MS Basic Maintenance
- Introduction to Hyphenated ICP-MS Techniques
- ICP-MS Resources
- Q & A session

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Agilent Technologies

ICP – OES

Inductively Coupled Plasma Optical Emission Spectrometry

DAY 1

- Basic Atomic Spectroscopy
- ICP-OES Hardware basics – Radial, Axial, Dual View and Synchronous Dual View
- Method Development, Instrument Setup and Calibration
- Sample Analysis
- Q & A session

DAY 2

- ICP-OES hardware and Accessories
- Sample Introduction Kits, MSIS, VGA, SVS-2 etc.
- ICP-OES Expert Software
- Q & A session

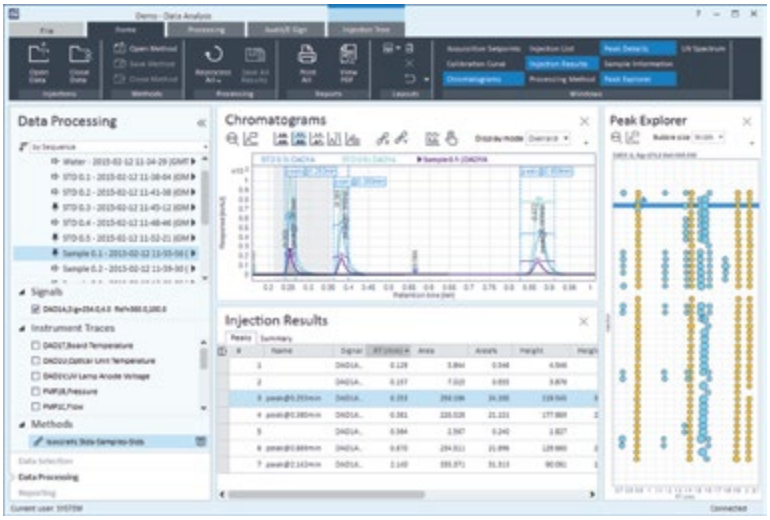
DAY 3

- Interference and Corrections
- Analysis Considerations
- Instrument Detection Limits (IDL), Method Detection Limits (MDL)
- Minimum Limits (ML), Linear Analytical Range etc.
- Q & A session

DAY 4

- ICP-OES Troubleshooting and Preventive Maintenance
- Good Laboratory Practices
- Running System Tests and QC Checks
- Q & A session

Agilent Technologies



OpenLAB CDS

OpenLAB Chromatography Data System - Chemstation / EZCHROM / CDS 2.2 edition

DAY 1

- Overview OpenLAB Software Suite
- Introduction to OpenLAB-Control Panel
- Networking multiple LC/GC for central management, remote access & monitoring
- Configure security, Users, Roles, Previledges
- User Interface - Chemstation Edition
- User Interface - EZChrom Edition
- Q & A session

DAY 2

- Method creation for LC/GC
- Data Acqusition - Running a Single Sample
- Running a Single Sample using Sequence Engine
- Define a Sequence Table, Specifying Sequence parameters, Running a sequence
- Concept of Sequence Container/ResultSet & Master methods
- Q & A session

DAY 3

- Compliance with 21CFRPart11
- Data Seurity. Data Integraity, Data Traceability
- Data Processing & Integration
- New Data Processing - Smart Integration
- Calibration, recalibration & multi-level calibration
- Q & A session

DAY 4

- Calibration Reporting - ESTD, ISTD, Normalized %
- Intelligent Reporting (IR) Engine & advance features
- Creating a new IR Template
- Troubleshooting communication failure
- Knowledge Quiz
- Handover Training Certificates & softcopy of training material
- Q & A session

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XRD

X-Ray Diffraction

DAY 1

- Introduction to X-ray diffraction
- Basic theory
- Introduction to the instrument and measurement software
- Data collection strategies
- Q & A session

DAY 2

- Theory: Good diffraction practice
- Measurement and evaluation errors
- Sample preparation
- DIFFRAC.EVA
- Qualitative phase analysis
- Q & A session

DAY 3

- DIFFRAC.EVA
- Search/Match strategies
- Semi-quantitative phase analysis
- Creation and handling of the databases
- Advanced features Hands-on modules
- Q & A session

XRF

X-Ray Fluorescence

DAY 1

- Welcome and Introduction
- Theory: Basics in XRF, Instrument parameters, Sample preparation
- Hands-on: S2PUMA and S6 Jaguar Touch Control
- Q & A session

DAY 2

- Theory: Quantitative Methods, Drift Correction
- Hands-on: Setting up Calibrations in SPECTRA.ELEMENTS
- Q & A session

DAY 3

- Theory: Standardless Methods, Evaluation
- Hands-on: Using SMART-QUANT-FP
- Q & A session

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TGA

Thermogravimetric Analyzers

DAY 1

- Introduction technique and instrumentation
- Calibration: theory
- Optimization of experimental conditions
- Typical applications (thermal stability, compositional analysis)

Modulated™ TGA, Kinetics:

- Theory
- Choice of experimental conditions
- Applications

Hi-Res™ TGA:

- Introduction
- Different modes and their application domain
- Choice of parameter settings
- Applications

TGA-EGA:

- Principle (coupling to MS, FTIR)
- Applications
- Q & A session

THEORETICAL DSC TRAINING

Differential Scanning Calorimeters

DAY 1

- Introduction technique and instrumentation
- Thermodynamic principles
- Design of experimental method
- Calibration: theory
- Optimisation of experimental conditions (purge gas, sample preparation, choice of pan type, heating & cooling rate)
- Q & A session

DAY 2

- Measuring conditions for typical material classes
- The glass transition temperature
- Melting and crystallization

How to measure heat capacity?

- Miscellaneous applications
- Introduction to Modulated DSC
- Q & A session

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Ion Chromatography

DAY 1

- Theory of Ion Chromatography
- Type of Columns
- Separation of Ions
- Detection Technique
- Suppressor in Ion Chromatography
- Introduction of Magic Net Software
- Configuration & Workplace
- Method
- Database Management
- Preparing Instrument for Analysis (Practical Session)
- Reagent Preparation
- De-aeration of the system
- Equilibration
- Blank Analysis
- Q & A session

DAY 2

- Columns - Basics & Handling
- Type of Columns and its chemistry
- Eluents and its effect
- Method Calibration (Practical Session)
- Calibration workflow
- Data processing
- Evaluation of Calibration parameters
- Q & A session

DAY 3

- Sample Analysis (Practical Session)
- Manual or Automatic Injection of Samples
- Result Evaluation
- Database Management (Practical Session)
- Reporting and its options
- Reprocessing of Data
- Maintenance
- Preventive Maintenance
- Dismantling / reassembling the consumables
- Troubleshooting in IC
- Q & A session

Other Information

- Participants

  Training might not be conducted if a minimum participant number will not be reached. Our representatives will keep you well informed in advance.

- Accommodation

  Accommodation is arranged at the customer's cost.

- Training Venue

  Gulf Bio Analytical

  Office No: 902, Sapphire Tower, Al Ittihad Road,

  Near Dnata Building, Deira, Dubai, U.A.E.

Toll Free Numbers :
UAE: 800 2255 422 | KSA: 800 11 61110 | India: 1800 103 0725

Email ID :
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*The training material will be shared to all on individual USB sticks during the course of the training session
*Participation Certificates will be awarded to all attendees