IMPROVE EFFICIENCY
WITH TRAINING

Training Overview
North America

PerkinElmer®
For the Better

PerkinElmer touches the lives of millions of people around the world every day, through science, innovation and applications expertise, we are committed to transforming risk into safety, mystery into knowledge and ideas into action for a healthier today and a better tomorrow.

PerkinElmer is the worlds' leading technology and solution provider in the fields of Human and Environmental Health.

We are actively engaged in the development of technology and solutions in the areas of analytical sciences, bio discovery and genetic screening.

PerkinElmer is proud to be associated with all the major customer accounts across industries including pharmaceutical, government, environmental, petrochemical and chemical.

This provides us the unique ability to understand and provide solutions across a wide spectrum of product technologies and varied application segments.

We operate in 150 countries worldwide and employ approximately 8500 employees. Our "Centers of Excellence" in Chicago and Downers Grove, Illinois; San Jose, California; Shelton, Connecticut; and Toronto, Canada provide fully equipped training and demonstration centers to give customers hands on experience of a wide spectrum of innovative instrumentation.

As a pioneering technological leader, our scientists continue to incorporate and market innovative instruments.

All training courses are delivered by our established team of experts

With many years of broad, industry experience at their fingertips, our highly skilled team of trainers ensures an outstanding wealth of knowledge which is at your disposal.

An exceptional combination of experience from both manufacturing and user environments allows us to fully understand your training requirements. This unrivalled depth of understanding enables our team to address your technical and application problems during the training.

With a broad range of technologies and our most current model instruments and software, our courses offer the perfect balance of both hands on training and theoretical learning.

Our training courses will help you answer any operational questions you have and provide you the opportunity to troubleshoot your application allowing you to increase the efficiency of your lab.

A full list of courses offered, along with information on how to enroll is available on our website at http://www.perkinelmer.com/training

Alternatively, if you wish to discuss your individual training needs, North American training locations, or customized training at your facility, please contact us at: ustraining@perkinelmer.com Or call 1-800-762-4000 Option "4"

CHROMATOGRAPHY DATA SYSTEMS

TotalChrom Principles of Operation
N020 1043 **Duration: 3 days**

This lecture and lab course presents users of TotalChrom® Workstation and Client/Server with a fundamental knowledge of the theory and operation of the software, basic maintenance, and troubleshooting. Discussion and hands-on exercises emphasize acquiring data, developing quantitative methods, and reprocessing data

GAS CHROMATOGRAPHY

Fundamental Gas Chromatography
N020 0407 **Duration: 3 days**

This course provides an overview of the basic principles, hardware, and operational techniques used in gas chromatography, along with column overview.

Clarus 500/600 GC/MS Operator Training
N020 0417 **Duration: 4 days**

This course introduces new Clarus® GC/MS users to gas chromatography/mass spectroscopy (GC/MS) and gives them an orientation to the hardware, software, and experimental requirements to accomplish successful system operation. Laboratory exercises provide an opportunity to carry out the main operations described in the lecture material.

GC Headspace
N020 0474 **Duration: 2 days**

This is a course designed to address equilibrium head space utilizing the PerkinElmer® TurboMatrix™ Headspace and Headspace Trap. The course includes basic and advanced techniques, including applications, method development, maintenance, and troubleshooting.

GC Communique
N020 0497 **Duration: 2 days**

This two-day course is designed to familiarize students with the Communique software and reporting techniques.

LIQUID CHROMATOGRAPHY

Fundamental LC
N020 0501 **Duration: 2 days**

For the beginner, this introduction to liquid chromatography provides an overview of the principles and practice of high-performance liquid chromatography (HPLC). The topics covered are basic chromatographic terminology, modes of HPLC (normal and reversed-phase, size exclusion, and ion exchange chromatography), instrumentation, peak identification and method development.

LC Chromera
N020 2402 **Duration: 3 days**

This lecture and lab course presents users of Chromera® 2 with a fundamental knowledge of the theory and operation of the software, basic maintenance, and troubleshooting. Discussion and hands-on exercises emphasize acquiring data, developing quantitative methods, and reprocessing data.

Advanced Topics for LC Chromera *Prerequisite
N020 0539 **Duration: 1 day**

This course will discuss advanced software techniques using Chromera 2.0 software.

* Students must have attended LC Chromera N020 2402 prior to attending this course.

AUTOMATED WORK STATIONS (AWS)

JANUS®
N020 9775 **Duration: 3.5 days**

This course is primarily an overview of the WinPREP® software. In-depth instruction and hands-on exercises focus on assay programming, using advanced functionalities, optimizing liquid handling performance, and basic instrument maintenance.

RADIOMETRIC DETECTION (RRD)

Tri-Carb® LSC
N020 9650 **Duration: 3 days**

This course is designed to present an overview of the use of LSC for quantitative measurement of radioactivity in a wide range of sample types including liquids, solids, filter membranes and surface monitoring (swipes).

ATOMIC ABSORPTION

Flame AA with AA WinLab Software
N020 5001   **Duration: 2 days**

This course provides the analyst with the knowledge and skills needed for optimizing and troubleshooting basic flame atomic absorption. Laboratory exercises include experiments in controlling interferences as well as procedures for developing methods. WinLab™ software will also be covered.

Graphite Furnace AA with AA WinLab Software
N020 0017   **Duration: 3 days**

This course will provide the analyst with the knowledge necessary to set up, run, troubleshoot, and maintain the graphite furnace. A considerable portion of this course is devoted to understanding the capabilities of the WinLab software used to operate the system. The course begins with the basics of graphite furnace atomic absorption (GFAA) and concludes with the most recent developments in the technique including simultaneous graphite furnace analysis.

Advanced Furnace
N020 0024   **Duration: 2 days**

This laboratory intensive course will focus on how to handle difficult samples. The modifier and its role in solving analytical problems will be discussed in detail. The class will examine complex matrices, focusing on peak plot interpretation as a means to method development. Techniques such as QA/QC as a means of verifying the accuracy of data will be discussed. Class participants will be expected to have a good working knowledge of the software.

FIMS/FIAS
N020 0015   **Duration: 1 day**

This course will provide the analyst with the knowledge necessary to set up, optimize and run the PerkinElmer FIMS/FIAS system for the determination of mercury. Laboratory exercises will be geared towards current AA systems. Laboratory experiments include manifold construction for the determination of mercury.

INDUCTIVELY COUPLED PLASMA

Optima ICP with ICP WinLab Software
N020 5010   **Duration: 3 days**

This comprehensive course comprises a study of basic emission theory, radial versus axial viewing, Optima™ hardware, and WinLab32™ software. All lab experiments will be conducted on current models of the PerkinElmer Optima series.

Advanced ICP   *Prerequisite*
N020 0027   **Duration: 2 days**

This course provides analysts with the knowledge needed to develop a method for ICP-OES analysis of complex samples. This lab intensive course covers when and how to use internal standards, inter-element correction factors (IECs) and multi-component spectral fitting (MSF) effectively to obtain accurate results.

* Students must have attended Optima ICP N020 5010 prior to attending this course.

Remote ICP WinLab Software
N020 0076   **Duration: 3 days**

This course will only cover WinLab32 software. Computers are provided to allow students to set up methods and solve analytical problems using real data. This course is designed to be taught at a location convenient to you.

ICP MASS SPECTROMETRY

ICP-Mass Spectrometry with ELAN Software
N020 0008   **Duration: 4 days**

This introduction to the ICP-MS analytical technique includes some theoretical background of ICP-MS. Laboratory experiments will be conducted to show how to set up, optimize and maintain the ICP-MS instrument. In addition, data will be collected by means of various analytical methods available with this technique. All lab experiments will be conducted on current models of ICP-MS instruments.

ELAN DRC
N020 5044   **Duration: 1 day**

This course will provide the knowledge and skills needed to properly operate the ELAN® DRC™. Laboratory experiments will be conducted to show the analyst how to set up and optimize the accessory for routine analysis. All lab experiments will be conducted on current models of ICP-MS instruments.

Introduction to NexION
N020 0190   **Duration: 4 days**

This introduction to the NexION™ ICP-MS analytical technique includes some theoretical background of ICP-MS. Laboratory experiments will be conducted to show how to set up, optimize and maintain the NexION instrument. In addition, data will be collected by means of various analytical methods available with this technique. All lab experiments will be conducted on the current NexION instrument.

LC ICP-MS Speciation
N020 5022   **Duration: 4 days**

This advanced course will cover the concept and implementation of speciation analysis by coupling the analytical techniques of inductively coupled plasma mass spectrometry (ICP-MS) and liquid chromatography (LC). This course will include a one-day primer on LC, a review of ICP-MS optimization and the interfacing of the two techniques.

ICP-MS Environmental Methodology   *Prerequisite*
N020 5046   **Duration: 2 days**

This advanced course will provide the analyst with the knowledge and skills need to properly setup ELAN ICP-MS Instruments to run U.S. EPA Environmental Methods. Laboratory exercises will be conducted to show how to set up and optimize ICP-MS instruments for environmental analysis. All lab exercises will be conducted on current models of ICP-MS instruments.

* Students must attend ICP-MS course (N020 0008) prior to attending.

ICP-MS Clinical Methodology
N020 5047   **Duration: 3 days**

This course provides an introduction to ICP-MS analytical techniques specifically for the clinical environment. Laboratory experiments will be conducted to show how to set up, optimize and maintain the ICP-MS instrument for clinical analysis. All lab experiments will be conducted on current models of ICP-MS instruments.

INFRARED TECHNOLOGY

IR Sample Prep
N020 0161 **Duration: 1 day**

This fundamental course in infrared sample preparation provides students with instruction on various sample handling techniques, allowing them to acquire good quality spectra by either transmission or reflectance.

IR Theory
N020 0162 **Duration: 1 day**

This course will cover infrared theory, how molecules react to light, Instrument Validation as well as IR design and theory.

IR Software
N020 0163 **Duration: 1 day**

This course is an introduction to FT-IR spectrometers and software. Through a combination of classroom lectures and hands-on exercises, students will become familiar with the routine operations of PerkinElmer FT-IR spectrometers. Students will learn various data processing techniques.

IR Spectral Interpretation for Beginners
N020 0152 **Duration: 1 day**

The lesson will cover vibrational infrared molecular structure and correlation charts. The student will be introduced to basic IR interpretation of spectra using functional group analysis, flow charts, direct comparison, visual pattern recognition and spectral library searching.

Polymer Characterization
N020 0154 **Duration: 2 days**

The student will be introduced to the use of FT-IR spectroscopy for the identification of various polymers and polymer additives. Through the use of classroom lectures and hands-on laboratory experiments the student will learn the various FT-IR sampling techniques.

IR Spectrum Express
N020 0174 **Duration: 1 day**

This course is an introduction to SpectrumExpress™ and Spectrum™ 10™ FT-IR software. Through a combination of classroom lectures and hands-on exercises, students will become familiar with the routine operations of the software.

THERMAL ANALYSIS

Introduction to DSC
N020 0607 **Duration: 2 days**

This course is for students who have recently started using the Pyris™ 1 DSC, DSC 8000, or the Diamond DSC. The practical aspects of operation and maintenance as well as introductory theory are covered in the course.

Introduction to TGA
N020 0605 **Duration: 2 days**

This course is designed for people who have recently started using the TGA7 or the Pyris 1 TGA. The practical aspects of operation and maintenance as well as introductory theory are covered.

Introduction to CHN Analysis
N020 0704 **Duration: 2 days**

The 2400 CHN User Training course is designed to provide the student with the skills necessary to successfully operate, calibrate and perform basic maintenance on the 2400 CHN Elemental Analyzer.

OUR TRAINERS…

Deborah Bradshaw is a graduate of the University of Central Florida with degrees in Chemistry and Biology. She has been working in the field of atomic spectroscopy for over 30 years and has several papers published. Her association with PerkinElmer began in 1988 as a user of atomic absorption and she specialized in developing methods for the analysis of seawater. She then advanced into the fields of ICP-OES and ICP-Mass Spectrometry as a technical trainer and support specialist.

Kevin Kingston has over 25 years experience with PerkinElmer and has held positions as inorganic instructor, support specialist and product specialist. His fields of expertise span several areas, in Atomic Spectroscopy, ICP-OES, ICP-MS, Environmental Methods, and ICP-MS Metal Speciation training.

Dr. Mark Parman, Ph.D. has over 30 years experience in analytical chemistry, and has been teaching courses for PerkinElmer for over fifteen years. Mark specializes in atomic spectroscopy techniques, including ICP-Mass Spectrometry, ICP Emission Spectroscopy and Atomic Absorption Spectroscopy. Dr. Parman's expertise spans a variety of application areas including environmental, precious metals, biological/clinical, mining, foods, toxic waste, nuclear, and oil/used oil techniques.

Silvio Pattacini spent 35 years as an IR (Infrared Spectroscopy) applications specialist with PerkinElmer. He currently teaches training courses for PerkinElmer in Connecticut and for the company at customer sites. Silvio's background covers a wide range of chemistry in FT-IR applications in forensics, consumer products, polymers and adhesives.

Dr. Pam Perrone, Ph.D. joined PerkinElmer and the liquid chromatography team over 25 years ago, after obtaining a doctorial degree in Analytical Chemistry. She has held numerous roles including application chemist, sales product specialist, technical support and instructor. Dr. Perrone has been involved in teaching HPLC and Chromatography Data Handling throughout the United States and Europe.

Dr. Thomas Pittman, Ph.D. has been working with PerkinElmer as a trainer on the Clarus GC/MS systems for the past 4 years. Thomas has over 25 years experience using various GC/MS systems in forensic and clinical laboratories. Dr. Pittman has been involved with the evolution of PerkinElmer GC/MS systems beginning with the TurboMass™ Gold to the present day Clarus 600 Series GC/MS.

Craig Sellman has an extensive background in GC, headspace, and GC/Mass Spectrometry, as well as TotalChrom and Communique software. Craig was a product specialist for LC and GC instrumentation from 1987 to 1995. Craig also developed a FT-IR detector for GC instruments. Craig has been a GC/TotalChrom instructor since 2008.

Krista Swanson is an application scientist, instructor and technical support specialist with over 20 years experience in the sales, service and support field of analytical instrumentation. Her specialty is Organic Elemental and Thermal Analysis, with knowledge in pharmaceutical, environmental, agricultural, food and energy industries.

Ken Uliano has over 35 years experience with the PerkinElmer team, and has been conducting training courses for over fifteen years. Ken spent the first twelve years in the manufacturing end of our business and now has specialized primarily in Thermal and Elemental Analysis for the past fifteen years where he currently holds the position of worldwide technical training and support specialist.

Pamela Wee has over 20 years with PerkinElmer Canada. Her field of experience lies in analytical instrumentation based on ICP-OES, and Atomic Absorption. Pamela is well-versed in laboratory quality practices, methods development and statistical analysis.

Sam White joined PerkinElmer in 1978 as part of the Infrared sales team prior to becoming an IR product specialist and instructor. Sam's knowledge extends to gas chromatography, infrared microspectroscopy, Raman, oil analysis, imaging and sample handling as well as multiple software programs: SpectrumExpress, Search, QUANT, Beers Law, Timebase™ and Spotlight™ software.

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For a complete listing of our global offices, visit www.perkinelmer.com/ContactUs