

Unity Lab Services Training Courses

the key to your laboratory's success

2014 Training Programme

UK and Ireland



Invest in Yourself

People are the most valuable assets in any lab. Unity Lab Services offers comprehensive, professional training and certification through a complete course portfolio that can help you obtain the most out of your instrumentation and results.

Our ultimate goal is to provide you with a total solution to your analytical needs. To meet this goal, we offer a wide range of training courses on:

- Instrument operation-hardware and software
- Instrument maintenance
- Software and applications

Optimal classroom settings and world-class instructors will enhance your learning experience, and allow you to gain greater productivity. As experts in their disciplines, our experienced specialists can provide a variety of education solutions to ensure that students are able to obtain the most value from their investment, and achieve relative practical and theoretical knowledge. A variety of venues is available for your convenience: on-site or at one of our Centres of Excellence.

We are looking forward to discussing your training needs and working with you to ensure your success with our products.



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Life Sciences Mass Spectrometry

Invest in Yourself. Whether you are willing to enhance your learning experience or gain greater productivity, the Life Sciences Mass Spectrometry courses are designed to ensure each student has time to address their specific topics of interest. The courses offer both practical and theoretical training and are taught by experienced and certified instructors.





Training: Ion Trap and LTQ Orbitrap Biotech Operations

Course Objective:

This course is designed for users that have previous LC-MS experience and are interested in protein and peptide analysis. It is specific to the Thermo Scientific ion trap and LTQ Orbitrap™ mass spectrometers and will include instruction for electrospray ionization (ESI) of proteins and peptides, instruction for setting up dynamic and static nanospray (NSI), calibration and basic maintenance, setup and optimization of various data-dependent acquisition methods. In addition, there will be an in depth discussion of qualitative analysis and processing of accurate mass methods with Thermo Scientific Xcalibur, Proteome Discoverer, FT, and SIEVE software programs. When ETD training is requested, the following topics can be incorporated to the course timetable: maintenance of ETD source, optimization, tuning and calibration of the ETD components, experimental set-up, ETD data processing.

The course material includes:

- Ion Trap and Orbitrap Theory
- Tuning and Calibration
- Hands-on ESI and NSI MS
- Data Dependent Method Design
- Post-Translational Modification Methods
- Parallel Detection Methods
- Accurate Mass Methods
- Xcalibur Software for Qualitative Methods
- Proteome Discoverer Software
- Basic Thermo Scientific LTQ Maintenance

This course is offered at customer site only

Training: Q Exactive Biotech Operations

Course Objective:

This course is designed for users that have previous LC-MS experience and are interested in protein and peptide analysis. It is specific to the Thermo Scientific Q Exactive™ mass spectrometer and will include instruction for electrospray ionization (ESI) of proteins and peptides, instruction for setting up dynamic and static nanospray (NSI), calibration and basic maintenance, setup and optimization of the various data dependent acquisition methods. In addition, there will be an in depth discussion of qualitative analysis and processing of accurate mass methods with Thermo Scientific Xcalibur, Proteome Discoverer, FT and SIEVE software programs. Information on the Pinpoint software can be also included in the training course.

The course material includes:

- Quadrupole and Orbitrap Theory
- Quadrupole and Orbitrap Hardware
- Instrument Tuning and Calibration
- Nano-flow LC Method Development
- Data Dependent and Multiplexing Method Design
- Xcalibur Set Up and Processing
- Proteome Discoverer Software
- Processing of Post Translation Modification Methods



Training: LTQ FT Biotech Operations

Course Objective:

The Thermo Scientific LTQ FT™ Biotech course is designed for users that have previous LC-MS experience and are interested in protein and peptide analysis. It is specific to the Thermo Scientific LTQ FT mass spectrometer and will include instruction for electrospray ionization (ESI) of proteins and peptides, tuning using nanospray and optimization of data-dependent acquisition. In addition, there will be an in depth discussion of qualitative analysis and processing accurate mass methods with Thermo Scientific Xcalibur and Proteome Discoverer software packages followed by hands-on applications of software to data sets. The training content can be customized for the customer's needs.

The course material includes:

- Ion Trap Theory
- FT ICR MS Theory
- Tuning and Calibration
- Hands-on ESI and NSI MS
- Data Dependent Method Design
- Post Translational Modification Methods
- Parallel Detection Methods
- Accurate Mass Methods
- XCalibur Software for Qualitative Methods
- Proteome Discoverer Software
- Basic LTQ Maintenance

This course is offered at customer site only

Training: MALDI LTQ and MALDI LTQ Orbitrap Biotech Operations

Course Objective:

The aim of this training course is to familiarize the new operator with the Thermo Scientific MALDI series of instruments. This will allow the new operator to perform manual inspection of whole sample, or utilize sample separation with LC-MALDI capabilities as well as metabolomic studies with Tissue imaging. The course covers a spectrum of topics ranging from instrument theory, instrument maintenance, sample preparation, instrument configuration, data acquisition approaches, and data processing.

The course material includes:

- Description of Instrument Hardware
- Correct Instrument Configuration for MALDI Analysis
- Tune Page Parameter Settings
- Automatic Gain Control (AGC), Crystal Positioning System (CPS), Auto Spectrum Filter (ASF)
- Instrument Calibration
- Plate Selection and Plate Calibration
- Data Dependent Methods
- Data Processing with Xtract and Proteome Discoverer
- Protein Calculator and Recalibrate OffLine
- Data Dependent Methods for LC MALDI Application (DevKit Feature)
- Tissue Imaging Application, Tune User Interface, Method Setup and Running Samples
- ImageQuest Usage

This course is offered at customer site only



Training: TSQ Biotech Operations

Course Objective:

The aim of this training course is to familiarize the new Thermo Scientific TSQ™ user with instrument operation for the purposes of protein and peptide quantitation. It includes instruction for electrospray (ESI) and nanospray (NSI) ionization of proteins and peptides, instrument calibration and tuning, data collection, maintenance and functionality of Thermo Scientific Xcalibur and Pinpoint software packages. The training content can be customized according to the customer's specific needs.

The course material includes:

- TSQ Hardware and Theory
- Tuning and Calibration
- Hands-on ESI and NSI MS
- Maintenance
- Parameters necessary for Good Quantitation
- Xcalibur Software for Quantitative Methods
- Pinpoint Software
- Instrument Method Development
- Data Processing

This course is offered at customer site only

Training: Quantitative Proteomics

Course Objective:

This course is aimed towards operators of Thermo Scientific ion trap, LTQ Orbitrap and TSQ instruments, who want to learn the latest techniques of quantitative proteomics. This training course will enable the operator to take their protein identification skills a step further by learning how to measure relative as well as absolute protein expression levels in biological samples. The training will demonstrate experiment design, programming of the LC-MS methods on the Thermo Scientific instrument of interest, and data evaluation using the appropriate Thermo Scientific software tools.

The course focuses specifically on the quantitation of proteins and peptides. Basic operation of ion trap, LTQ Orbitrap and TSQ instruments, as well as basic Xcalibur training, are not covered in this course. Students desiring this basic training should take an Operations course specific to their instrument of choice, or take the Xcalibur Training Module in lieu of this course

The course material includes:

- LC-MS Method Design for Quantitation using Instrument Setup
- Data Quality Analysis using the Qual Browser
- Absolute Quantitation using LCQuan and the Xcalibur Tools (Processing Setup, Sequence Setup and Quan Browser)
- Label Free Quantitation using the SIEVE Software Package
- Quantitation of Peptides using Stable Isotope Labeling with Amino Acids in Cell Culture (SILAC) and the Proteome Discoverer Software
- Quantitation of Peptides with Isobaric Mass Tagging (iTRAQ and TMT) and Proteome Discoverer Software
- SRM (Selected Reaction Monitoring) Experiments using Pinpoint Software

This course is offered at customer site only



Training: Fusion Biotech Operations

Course Objective:

This course is designed for users that have previous LC-MS experience and are interested in protein and peptide analysis. It is specific to the Thermo Scientific Fusion mass spectrometer and will include instruction for electrospray ionization (ESI) of proteins and peptides, instruction for setting up dynamic and static nanospray (NSI), calibration and basic maintenance, setup and optimization of various data-dependent acquisition methods. In addition, there will be an in depth discussion of qualitative analysis and processing of accurate mass methods with Thermo Scientific Xcalibur, Proteome Discoverer, and SIEVE software programs. When ETD training is requested, the following topics can be incorporated to the course timetable: maintenance of ETD source, optimization, tuning and calibration of the ETD components, experimental set-up, ETD data processing.

The course material includes:

- Dual Pressure Linear Ion Trap, Quadrupole and Orbitrap Theory
- Basic Tune and Calibration
- Hands-on ESI and NSI MS
- Data Dependent Method Design
- Post-Translational Modification Methods
- Parallel Detection Methods
- Accurate Mass Methods
- Xcalibur Software for Qualitative Methods
- Proteome Discoverer Software
- Basic Maintenance

Training: Proteome Discoverer Software

Course Objective:

The aim of this training course is to provide new users with the ability to use the Thermo Scientific Proteome Discoverer™ software to its full potential. Proteome Discoverer is a flexible, expandable software platform for the analysis of qualitative and quantitative proteomics data. Detailed presentations will be given on all modules together with hands on exercises in order to ensure understanding of all the processes. The students will become familiar with the subjects of database manipulation, database search parameters as well as interpretation of results. By the end of the course they should be able to apply all software tools for their own purposes.

Training: SIEVE Software

Course Objective:

Thermo Scientific SIEVE™ software provides label-free quantitative differential expression analysis of proteins and peptides from the comparison of multiple LC/MS datasets. It is a statistically rigorous tool for analyzing data from biomarker discovery experiments. This course will allow the new user to use all modules of the software successfully. The students will become familiar with the subjects of chromatographic alignment, statistical evaluation and database searching. By the end of the course they should be able to apply all software tools for their own purposes.



Training: PEAKS Studio Software

Course Objective:

The aim of this training course is to provide new users with the ability to use the Thermo Scientific PEAKS Studio™ de novo sequencing software to its full potential. An introduction will be provided on the optimization and set up of data dependent acquisition methods for the purpose of de novo sequencing. Additionally, detailed presentations will be given on all PEAKS Studio modules together with hands on exercises in order to ensure understanding of all the processes. The students will become familiar with the subjects of manual and automatic de novo sequencing including post translation modifications, homology searches, as well as interpretation of the results. By the end of the course they should be able to apply all software tools for their own purposes.

Training: Pinpoint software

Course Objective:

The aim of this training course is to provide new users with the ability to use the Pinpoint software to its full potential in combination with TSQ, LTQ Orbitrap or Q Exactive data. Pinpoint software assists in the fast development of quantitative protein/peptide assays and provides a great tool for processing data from quantitative analyses. The course will cover all aspects of the identification, characterisation and quantification of biological samples, providing a complete start-to-finish workflow for biomarker ID and verification. MSn and High-Resolution/Accurate Mass (HR/AM) data as well as Selected Reaction Monitoring (SRM and iSRM) transitions data can be processed. The training content can be customized for the customer's needs and this module can also be combined with the TSQ, LTQ orbitrap and Q Exactive Biotech Operations courses on offer.



ProSightPC Software

Course Objective:

The aim of this training course is to provide new users with the ability to use the ProSightPC software to its full potential. Thermo Scientific ProSightPC™ is an all-around tool for identification and characterization of both intact proteins and peptides. It enables high-throughput processing of all accurate-mass MS/MS data, whether from top-down, middle-down or bottom-up experiments including the characterization of proteins with known PTMs. Detailed presentations will be given on all the options available with hands on exercises in order to ensure understanding of all the processes. The course will cover all the steps from software setup to data reporting, including the use of the multiple search modes available to determine the exact protein sequence including modifications and alternative splicing.

Protein Deconvolution Software

Course Objective:

The aim of this training course is to provide new users with the ability to use the Protein Deconvolution software to its full potential. Thermo Scientific Protein Deconvolution significantly improves the identification and characterization of intact proteins from mass spectrometric data. It is the only protein deconvolution software available today that takes full advantage of the ultra-high-resolution, accurate-mass data produced by Orbitrap-based mass spectrometers. Detailed presentations will be given on all the options available with hands on exercises in order to ensure understanding of all the processes. The course will cover all the steps necessary to the use of the two built-in algorithms (Xtract and ReSpect), deconvoluted data handling and reporting. Guidelines on intact protein analysis for Thermo Scientific mass spectrometers will also be provided.



Training: Fusion Operations

Course Objective:

The Fusion Operations course is designed for users that have previous LC-MS experience and would like to familiarize themselves with the Thermo Scientific Fusion mass spectrometer. The course will cover API and ion trap theory, tuning, calibration, data collection, general functionality of the Xcalibur software and main workflows for additional processing softwares. The emphasis of the training is on small molecule analysis, accurate mass applications and data processing.

The course material includes:

- Dual Pressure Linear Ion Trap, Quadrupole and Orbitrap Theory
- Basic Tune and Calibration
- Compound Tuning for MS and MS/MS Purposes
- Instrument Method Development for LC/FTMS
- Introduction to Qual Browser
- Accurate Mass Methods
- Data Dependent Analysis
- Quantitation using Xcalibur

Training: Ion Trap Operations

Course Objective:

The aim of this training course is to familiarize the new ion trap user with basic instrument operation, including API and ion trap theory (linear and 3D, single and dual traps), tuning, calibration, data collection, maintenance, and general functionality of the Xcalibur software package. The focus of this course is small molecule analysis for both qualitative and quantitative purposes. No attempt is made to teach protein mapping or peptide sequencing. Students desiring focused instruction on peptide/protein analysis should explore the possibility of taking one of the Biotech courses on offer, in lieu of this course.

The course material includes:

- Ion Trap Theory
- Tuning and Calibration
- Hands-on APCI and ESI MS
- Instrument Method Development for LC/MS
- Multi-Stage MS Method Building
- Quantitative Analysis
- Thermo Scientific Xcalibur Software
- Basic Maintenance

Life Sciences Mass Spectrometry

Small Molecules-Structure Elucidation



Training: LTQ Orbitrap Operations

Course Objective:

The LTQ Orbitrap Operations course is designed for users that have previous LC-MS experience and would like to familiarize themselves with the Thermo Scientific LTQ Orbitrap mass spectrometer. The course will cover API and ion trap theory, tuning, calibration, data collection and general functionality of the Xcalibur software. The emphasis of the training is on small molecule analysis, accurate mass applications and data processing.

The course material includes:

- LTQ 2D Ion Trap and Orbitrap Theory (Single and Dual Traps)
- Basic Tune and Calibration
- Compound Tuning for MS and MS/MS Purposes
- Instrument Method Development for LC/FTMS
- Introduction to Qual Browser
- Accurate Mass Methods
- Data Dependent Analysis
- Quantitation using Xcalibur

This course is offered at customer site only

Training: LTQ FT Operations

Course Objective:

The Thermo Scientific LTQ-FT Operations course is designed for users that have previous LC-MS experience. Experience in FTMS is not required. The course covers mass spectrometry and chromatography in general with an emphasis on small molecule, accurate mass applications. The training content can be customized for the customer's needs.

The course material includes:

- Ion Trap and ICR Theory
- Tuning and Calibration
- Hands-on APCI and ESI MS
- Instrument Method Development for LC/FTMS
- Multi-stage MSⁿ Method Building
- Parallel Detection Methods
- Accurate Mass Methods
- Xcalibur Software
- Basic LTQ Maintenance

This course is offered at customer site only



Training: Metabolite Identification using Ion Trap Instrumentation and Networks Mass Frontier

Course Objective:

The aim of this training course is to familiarize new Thermo Scientific ion trap users with optimal instrument operation and software options for performing efficient identification of metabolites. The course will cover API and ion trap theory, tuning, calibration, data collection and general functionality of the Xcalibur software. In addition, data processing for the purposes of metabolite identification and structure elucidation will be performed using the Mass Frontier™ and Thermo Scientific Networks™ software packages.

The course material includes:

- Ion Trap and Orbitrap Theory
- Basic Tune and Calibration
- Compound Tuning for MS and MS/MS purposes
- Method Development
- Data Dependent Analysis and Accurate Mass Methods
- Introduction to Qual Browser
- Identification of Metabolites using Networks
- Structure Elucidation using Mass Frontier
- Cross-Species Comparison using Mass Frontier

This course is offered at customer site only

Training: Structure Elucidation of Unknowns

Course Objective:

The aim of this training course is to familiarize new Thermo Scientific ion trap users with optimal instrument operation and software options for performing efficient structure elucidation of unknown small molecules such as: impurities in synthetic samples, toxic compounds, explosives, environmental components, etc. The course will cover API and ion trap theory, tuning, calibration, data collection and general functionality of the Xcalibur software. In addition, Mass Frontier will be used for automatic chromatographic processing, library building and searches of unknowns, as well as spectra interpretation.

The course material includes:

- Ion Trap and Orbitrap Theory
- Basic Tune and Calibration
- Compound Tuning for MS and MS/MS Purposes
- Method Development
- Data Dependent Analysis and Accurate Mass Methods
- Introduction to Qual Browser
- Component Detection using Mass Frontier
- Creation and Interrogation of Libraries in Mass Frontier
- Spectra Interpretation using Mass Frontier

This course is offered at customer site only

Life Sciences Mass Spectrometry

Small Molecules-Structure Elucidation



Training: Networks-Mass Frontier Software

Course Objective:

The aim of this training course is to provide new users with the ability to use the Networks and Mass Frontier software packages to their full potential for the purposes of metabolite identification. Detailed presentations will be given on all the modules together with hands on exercises in order to ensure understanding of all the processes. With Networks the students will identify metabolites using the different search options the software offers. They will then use Mass Frontier to perform structure elucidation of any unknowns and all the identified metabolites will be finally saved and searched in libraries. By the end of the course the attendees should be able to customize all software applications for their own purposes during metabolic experiments.

Training: Mass Frontier Software

Course Objective:

The aim of this course is to provide new users with the ability to use the Mass Frontier software to its full potential. Mass Frontier offers many unique, sophisticated features for efficient processing, organizing, and interpreting of mass spectral data. These can be applied for the purposes of structure elucidation of unknown small molecules in various fields, such as: impurity identification, environmental analysis, toxicology analysis, metabolite identification, etc. Detailed presentations will be given on all Mass Frontier modules together with hands on exercises in order to ensure understanding of all the processes. The students will become familiar with the subjects of database generation and manipulation, spectra interpretation, as well as compound classification with the use of statistics. By the end of the course they should be able to apply all software applications for their own purposes.

Training: SIEVE Software

Course Objective:

Thermo Scientific SIEVE software provides a label-free quantitative analysis of metabolic pools by comparison of multiple LC-MS datasets. It can be used to compare the metabolomes of control versus treated samples as well as from time-course experiments. This Thermo Scientific course will enable the new user to utilize all the modules of this software package in order to perform statistically valid metabolome experiments. The course topics include a familiarization with chromatographic alignments, statistical evaluation of metabolic pool sizes and exact mass database queries. By the end of the course the student will be able to apply all software tools to fulfill their experimental requirements.

Life Sciences Mass Spectrometry

Small Molecules-Quantitation and Screening



Training: TSQ Operations

Course Objective:

The aim of this training course is to familiarize the new TSQ user with instrument operation including atmospheric pressure ionization, quadrupole principles, compound tuning, instrument calibration, data collection, maintenance and general functionality of Xcalibur and LCQuan software packages. The focus of this Thermo Scientific training course is small molecule quantitation and the different approaches enabled by hardware and software in this field will be explored. Customers interested in the quantitation of peptides and proteins should choose the TSQ Biotech Operations course instead.

The course material includes:

- TSQ Hardware Components
- TSQ Scan Modes
- TSQ Instrument Control
- Quantitation using Xcalibur
- Quantitation using LCQuan
- XReport
- User Maintenance

Training: Exactive Operations

Course Objective:

The aim of this training course is to familiarize the new Thermo Scientific Exactive™ user with the Orbitrap technology. This will cover API and Orbitrap theory, tuning, calibration, data collection and general functionality of the Thermo Scientific Xcalibur and ToxID software packages. The emphasis of the training is on small molecule analysis, accurate mass applications and data processing.

The course material includes:

- Overview of Theory and Practical Operation of the Thermo Scientific Orbitrap Mass Analyzer
- System Tuning and Calibration Procedures
- Preventative Maintenance and Troubleshooting Procedures
- Method and Sequence Setup
- Data Processing.

Life Sciences Mass Spectrometry

Small Molecules-Quantitation and Screening



Q Exactive Operations

Course Objective:

The aim of this training course is to familiarise the new Thermo Scientific Q Exactive™ user with Orbitrap technology. The training agenda covers API, Quadrupole and Orbitrap theory, tuning, calibration, data collection and general functionality of the Thermo Scientific Xcalibur, LCQuan and Tox ID software packages. The emphasis of the training course is on small molecule analysis both from a qualitative and quantitative point of view, on accurate mass applications and data processing.

The course material includes:

- API, Quadrupole and Orbitrap Theory
- Q Exactive Hardware Components
- Tuning and Calibration
- Quantitative Set Up and Processing
- Qualitative Set Up and Processing
- Non Targeted/Unknown Screening
- Troubleshooting and Maintenance

TLX Series Systems Operations

Course Objective:

The aim of this training course is to familiarize the new user with TurboFlow technology that can be used in conjunction with Thermo Scientific mass spectrometers and allows elimination of sample preparation techniques. The training will cover the theory of turbulent flow chromatography, hardware setup and maintenance, method setup and data acquisition. All aspects of the Thermo Scientific Aria software will be covered. The students will be guided through all principles of operation and hands on examples will be used for successful method development.

The course material includes:

- Theory of Turbulent Flow Chromatography
- Hardware Set Up: Autosampler, Injector Ports, Loading and Eluting Pumps, Multiple Column Module (MCM)
- Aria Software: Method Creation, Batch Set Up, Pressure Trace Read Backs
- Quick Elute Methods
- Focus Mode Method Set Up
 - Turbo Flow Column Selection
 - Elution Optimization from Analytical Columns
 - Method Variables

This course is offered at customer site only

Life Sciences Mass Spectrometry

Small Molecules-Quantitation and Screening



FAIMS

Course Objective:

The aim of this training course is to familiarize the new user with the high Field Assymmetric Ion Mobility Spectrometry technique. The course will introduce the operator to the theory of this method, the hardware, maintenance and operation and will include hands on compound optimization and troubleshooting. The advantage of using FAIMS for the purposes of quantitative analysis will also be demonstrated. This training module can be combined with any of the instrument Operations courses on offer.

EQuan

Course Objective:

The aim of this course is to familiarize the new user with the Thermo Scientific EQuan™ large volume injection technique. The training will cover the principles of operation and the theory of the method, hardware setup and maintenance, method setup and data acquisition. All considerations with respect to large volume injections will be discussed. This training module can be combined with any of the instrument Operations courses on offer.

TraceFinder Software

Course Objective:

Thermo Scientific TraceFinder™ is a software package with built-in workflows that have been developed to assist in routine analysis of environmental and food residue applications. The aim of this training course is to provide new users with the ability to use the software to its full potential. Detailed presentations will be given on all TraceFinder functionalities together with hands on exercises in order to ensure understanding of all the processes. The software setup, user selection and all the steps necessary for data collection and processing, data analysis and report generation will be covered. This training module can be combined with any of the instrument Operations courses on offer.

Life Sciences Mass Spectrometry

Small Molecules-Quantitation and Screening



ExactFinder Software

Course Objective:

The aim of this training course is to provide new users with the ability to use the Thermo Scientific ExactFinder™ software to its full potential. ExactFinder software is the ideal choice, for routine targeted analysis and general unknown screening.

Detailed presentations will be given on all the options available with hands on exercises in order to ensure understanding of all the processes. The course will cover setup of qualitative and quantitative workflows, explanation of HR/AM spectral library search, Isotope pattern matching and reporting.

MetQuest Software

Course Objective:

The aim of this training course is to provide new users with the ability to use the Thermo Scientific MetQuest™ software to its full potential. MetQuest software enables laboratories to take full advantage of Orbitrap high-resolution accurate-mass (HRAM) full scan data to perform quantitative metabolic stability studies and identify putative metabolites in a single injection.

Detailed presentations will be given on all the options available with hands on exercises in order to ensure understanding of all the processes. The course will cover all the steps necessary to build qualitative and quantitative workflows, best practices for instrument method setup, processing and reporting of results.

Training Schedule 2014



COURSE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Q Exactive Operations		25-28			20-23						18-21	
Proteome Discoverer Software		20		01					10	21		
TraceFinder Software		12		15			9			22		
TSQ Operations			04-07								04-07	
Fusion Biotech Operations			11-14						23-26			
Q Exactive Biotech Operations			18-21				01-04			07-10		
Exactive Operations				29 Apr-01 May							11-13	
Fusion Operations						03-06			30 Sept-03 Oct			



Hemel Hempstead, tuition in English.



Chromatography

Real-World Knowledge. For experienced and new users to our extensive line of Chromatography instruments, we offer both practical and theoretical training courses taught by experienced and certified instructors. Course sizes are kept to a minimum to ensure each student has access to instruments, as well as time to address their specific topics of interest.



Unity™ Lab Services
Part of Thermo Fisher Scientific



GC Operations

Course Objective:

The aim of this course is to familiarize the new Thermo Scientific GC user with basic instrument operation including gas chromatography theory and optimization, routine maintenance, data acquisition, data processing and the general functionality of the Thermo Scientific ChromCard or ChromQuest software packages.

The course material includes:

- GC Theory & Optimization
- GC Routine Maintenance
- ChromCard/ChromQuest Software Overview
- GC Method and Sequence Set up
- Different types of Calibration with ChromCard/ChromQuest
- Evaluation of Quantitative Data
- Reporting

ChromCard Software

Course Objective:

This course is designed to familiarize the user with the operation of Thermo Scientific ChromCard™ software for use in qualitative and quantitative analysis. Detailed presentations will be given on all ChromCard modules together with hands on exercises in order to ensure understanding of all the processes. The users will become familiar with the subjects of method and sequence set-up, data manipulation, data integration and report generation. By the end of the course they should be able to apply all software tools for their own purposes.

ChromQuest Software

Course Objective:

This course is designed to familiarize the user with the operation of Thermo Scientific ChromQuest™ software for use in qualitative and quantitative analysis. Detailed presentations will be given on all ChromQuest modules together with hands on exercises in order to ensure understanding of all the processes. The users will become familiar with the subjects of method and sequence set-up, data manipulation, data integration and report generation. By the end of the course they should be able to apply all software tools for their own purposes.



Training: Headspace Gas Chromatography – Technique and TriPlus 300 HS Familiarization

Course Objective:

The course is intended for those new to the technique of Headspace Gas Chromatography and seeks to demonstrate how to build and optimize methods to maximize both sensitivity and precision. The course explores various headspace techniques such as partition, total vaporization and Multiple Headspace Extraction (MHE) and explains which technique is most appropriate for various analytical challenges. This training course is an intensive mixture of theory and practical with instrument operation and maintenance high on the agenda.

The course material includes:

- Basic Headspace GC Theory
- Method Development
- Influence of HS variables
- HS-GC techniques
- Instrument Calibration
- Liner and column selection
- Instrument maintenance
- Troubleshooting

Training: Triplus Robotic Sampler Handler Familiarization – Gas Chromatography

Course Objective:

This operations training course is intended for new users of the Triplus RSH sampler handler. The aim of the course is to deliver a better understanding of automated liquid injection, headspace sampling and solid phase micro extraction using the Triplus RSH. This training course is an intensive mixture of theory and practical with instrument operation and maintenance high on the agenda.

The course material includes:

- Brief Introduction to liquid injection, Headspace and SPME
- Introduction to the Triplus RSH and components options
- Teaching and checking your objects
- Configuring your Triplus RSH for Liquids, Headspace and SPME
- Method Development (liquids, Headspace and SPME)
- Instrument maintenance
- Prep cycles
- Troubleshooting



ISQ Operations

Course Objective:

The aim of this training course is to familiarize the new Thermo Scientific ISQ™ user with basic instrument operation including gas chromatography optimization for mass spectrometry, maintenance, EI, CI and quadrupole theory, tuning, calibration, data acquisition, data processing and the general functionality of the Thermo Scientific Xcalibur software package

The course material includes:

- GC Theory and Optimisation (EI and CI)
- Quadrupole Theory
- GC and ISQ Hardware and Maintenance
- Scan Functions
- Qualitative Set Up and Processing
- Quantitative Set Up and Processing
- Introduction to new software packages for GC-MS.

PolarisQ - ITQ Operations

Course Objective:

The aim of this training course is to familiarize the new Thermo Scientific PolarisQ and ITQ™ user with basic instrument operation including gas chromatography optimization for mass spectrometry, maintenance, EI, CI and ion trap theory, tuning, MSn data acquisition, data processing and the general functionality of the Xcalibur software package.

The course material includes:

- GC Theory and Optimisation (EI and CI)
- Ion Trap Theory
- GC and PolarisQ/ITQ Hardware and Maintenance
- Scan Functions
- Qualitative Set Up and Processing
- Quantitative Set Up and Processing
- Introduction to new Software Packages for GC-MS



GC TSQ Operations

Course Objective:

The aim of this training course is to familiarize new users of the Thermo Scientific GC TSQ™ instrument series user with basic instrument operation including gas chromatography optimization for mass spectrometry, maintenance, EI, CI and quadrupole theory, tuning, calibration, data acquisition, data processing and the general functionality of the Xcalibur software package.

The course material includes:

- GC Theory and Optimisation (EI and CI)
- Quadrupole Theory
- GC and TSQ Hardware and Maintenance
- Scan Functions
- Qualitative Set Up and Processing
- Quantitative Set Up and Processing
- Introduction to new Software Packages for GC-MS

This course is offered at customer site only

MSQ Plus Operations

Course Objective:

The aim of this training course is to familiarize the new Thermo Scientific MSQ Plus™ user with instrument operation including atmospheric pressure ionization, quadrupole principles, compound tuning, instrument calibration, data collection, maintenance and general functionality of the Thermo Scientific Xcalibur and Dionex Chromeleon software packages. The focus of this course is small molecule analysis for both qualitative and quantitative purposes.

The course material includes:

- MSQ Hardware Components
- Maintenance
- Tuning and Mass Calibration
- Compound Optimization and Method Development
- Quantitative SIM Analysis by Electrospray
- Quantitation using Xcalibur/Chromeleon
- Quantitation using LCQuan
- Quantitation by APCI
- Cone Fragmentation
- Xcalibur Qualitative Processing

This course is offered at customer site only



DFS Instrument Operator Training for Quantitative Applications

Course Objective:

The general objective of the Thermo Scientific DFS™ instrument operator training for quantitative applications is to introduce the new user to quantitative GC/HRMS techniques using dioxin/furan analysis as an example. The course will familiarize users with the operational techniques and data evaluation procedures needed for high resolution GC/MS MID methods for isotope dilution techniques, following EPA method 1613 for the analysis of Dioxins/Furans. Please note that for this course, knowledge of the EPA method 1613 or equivalent methods is required, as well as proficient understanding of mass spectrometry (MS). The participants should have experience in the field of chromatographic analysis, especially in gas chromatography.

The course material includes:

- Introduction into the Hardware and Basics of the DFS and General HRM
- Instrument Setup for Dioxin Analysis
- MID (Multiple Ion Detection)
- Data Evaluation using Qual Browser
- Processing Data Using Target Quan
- Generating reports using the Reporter Application

DFS Dual Data Operator Training

Course Objective:

The general objective of the DFS Dual Data Operator training course is to introduce Dual Data acquisition for high throughput applications. For this course, a proficient understanding of mass spectrometry and DFS operation is expected. The participants should have the Dual Data option on the DFS system.

The course material includes:

- Introduction into the Hardware and Basics of the Dual Data Acquisition
- Instrument setup for Dual Data Analysis
- Troubleshooting and Maintenance of the Dual Data Configuration.



Xcalibur Software

Course Objective:

This course is designed to familiarize the student with the operation of Xcalibur software for use in qualitative and quantitative analysis. Detailed presentations will be given on all Xcalibur modules together with hands on exercises in order to ensure understanding of all the processes. The students will become familiar with the subjects of method and sequence set-up, data manipulation, automated processing and report generation. By the end of the course they should be able to apply all software tools for their own purposes.

TraceFinder Software

Course Objective:

Thermo Scientific TraceFinder™ is a software package with built-in workflows that have been developed to assist in routine analysis of environmental and food residue applications. The aim of this training course is to provide new users with the ability to use the software to its full potential. Detailed presentations will be given on all TraceFinder functionalities together with hands on exercises in order to ensure understanding of all the processes. The software setup, user selection and all the steps necessary for data collection and processing, data analysis and report generation will be covered. This training module can be combined with any of the instrument Operations courses on offer.

TSQ 8000 Operations

Course Objective:

The aim of this training course is to familiarize new users of the Thermo Scientific TSQ™ 8000 system with basic instrument operation including gas chromatography optimization for mass spectrometry, maintenance, EI, CI and quadrupole theory, tuning, calibration, data acquisition, automated SRM development, data processing and the general functionality of the Thermo Scientific Xcalibur and TraceFinder software packages.

The course material includes:

- GC Theory and Optimization (EI and CI)
- Quadrupole Theory
- GC and TSQ 8000 Hardware and Maintenance
- Scan Functions
- Qualitative Set Up and Processing with Xcalibur and Tracefinder
- Quantitative Set Up and Processing with Xcalibur and Tracefinder



Today's laboratories face many challenges such as maximising productivity, improving quality, controlling costs, complying with regulations and coping with change. Facing all these challenges becomes significantly easier when you have the right chromatography software. Chromeleon is widely regarded to be the most powerful chromatography data system and can help you meet these needs. However, having the right chromatography is just part of the solution—possessing the right skills and knowledge to use the software in the most efficient and effective manner is imperative.

Our extensive range of software training is designed to provide you with the necessary tools to increase your Chromeleon skills. We have also developed a series of workshops which can be attended separately or combined to provide a tailored programme of courses.

All training is provided by experienced software specialists who have extensive knowledge and have helped analysts from many of the world's leading organisations to achieve their objectives. We have developed hands-on Chromeleon training techniques which provide the ideal method of study for chromatography data systems.

Introduction to Chromeleon 7 – Level 1

Course Outline

- Getting started.
- General navigation.
- Basic sequencing and programming.
- Basic calibration.
- Manual and automatic instrument operation.
- Collecting data.
- Data processing.
- Specially requested topics (time permitting).

Who Should Attend?

This course has been designed for chromatographers who are new to the Chromeleon workstation or for existing users who require refresher training.





Next Steps in Chromeleon 7 – Level 2

Course Outline

- Advanced sequencing and programming.
- Building and managing eWorkflows.
- Report writing and editing.
- Queries.
- System suitability testing.
- Specially requested topics (time permitting).

Who Should Attend?

This course has been designed for experienced users of Chromeleon or delegates who have attended the introduction course.

Introduction to Chromeleon 6.8 — Level 1

Course Outline

- Getting started.
- General navigation.
- Manual instrument operation.
- Setup and execution of automated runs.
- Working with data.
- Basic integration.
- Basic calibration and quantification.
- Basic reporting and report editing.
- Specially requested topics (time permitting).

Who Should Attend?

This course has been designed for chromatographers who are new to the Chromeleon workstation or for existing users who require refresher training.

Next Steps in Chromeleon 6.8 – Level 2

Course Outline

- Understanding client/server architecture.
- System configuration.
- Data management.
- The Chromeleon database.
- Understanding and using Chromeleon dynamic updating.
- Intermediate-level data processing.
- Report customization.
- Specially requested topics (time permitting).

Who Should Attend?

This course has been designed for experienced users of Chromeleon or delegates who have attended the introduction course.



Ion Chromatography (IC)



Ion Chromatography New Operator Course

Course Outline

The course covers the basic ion chromatography theory with explanation as to how each component of the system functions, ensuring the operator can perform basic analysis together with a useful understanding of ion chromatography instrumentation, including automation.

Courses are grouped to maximise the best utilization for the operator on their particular product line.

Who Should Attend?

The courses are designed to help users who are new to the technique and instrumentation of Ion Chromatography or for those who want to enhance their theoretical understanding of Ion Chromatography

Which Systems Are Covered?

Thermo Scientific Dionex ICS-90, Dionex ICS-900, Dionex ICS-1000, Dionex ICS-1100, Dionex ICS-1500, Dionex ICS-1600, Dionex ICS-2000, Dionex ICS-2100, Dionex ICS-3000, Dionex ICS-5000.

Ion Chromatography Maintenance and Troubleshooting

Course Outline

The maintenance and troubleshooting courses will assist those undertaking basic maintenance of their Ion Chromatography systems. The courses cover front line hardware maintenance, column care and assist the operator in developing troubleshooting skills.

Courses are grouped to maximise the best utilization for the customer on their particular product line.

Who Should Attend?

These courses would suit users who have attended the new operator courses or who are confident in the use of Ion Chromatography system and wish to carry out front line maintenance.

Which Systems Are Covered?

Thermo Scientific Dionex ICS-90, Dionex ICS-900, Dionex ICS-1000, Dionex ICS-1100, Dionex ICS-1500, Dionex ICS-1600, Dionex ICS-2000, Dionex ICS-2100, Dionex ICS-3000, Dionex ICS-5000.



New Operator Course for Dionex UltiMate HPLC Systems

Course Outline

- A basic introduction to HPLC.
- Understanding of the practical aspects of the instrument.
- Practical tips to improve system performance.
- Information regarding useful operation parameters.
- An overall familiarisation of the Dionex UltiMate 3000 System.

Who Should Attend?

This course has been designed for new users or potential users of the Dionex UltiMate 3000 HPLC and Dionex Ultimate 3000 RSLC (Rapid Separation).

Maintenance and Troubleshooting for Dionex UltiMate HPLC Systems

Course Outline

- Effectively detecting, troubleshooting and rectifying common issues.
- Performing instrument maintenance.
- Carrying out relevant diagnostic tests.
- Experience from hands-on laboratory exercises.
- Replacing common HPLC parts.

Who Should Attend?

This course would suit users who have attended the new operator courses or who are confident in the use of the Dionex UltiMate 3000 HPLC and Dionex Ultimate 3000 RSLC (Rapid Separation) and wish to carry out front line maintenance.



On-Site Training Course



Course Description

On-site training provides your company with the opportunity to create a custom made course which meets your specific requirements. Customised training courses of various length and content can be designed and held in your training facility, laboratory or at one of our locations.

Courses can include any of the topics covered in the previous pages plus:

- Software Features for Photodiode Array Detection.
- Software Features for Report Publishing.
- Using Dionex Chromeleon to Comply with 21 CFR 11.
- Dionex Chromeleon Software Features for Administrators.
- IT Administrator.
- Advanced Software Features for Fraction Collection.
- Introduction to the Basic Theory of Ion Chromatography.
- Specified IC Chromatography Courses.
- Specific HPLC and Nano Chromatography Courses (See Page 4 & 5).
- Dionex ASE instruments– (See Page 6).
- Dionex Chromeleon 6.8 Advanced – Level 3.
- Thermo Scientific Dionex AutoTrace Solid Phase Extraction.
- Electrochemical and CAD Detectors.
- New Operator Course for Dionex Ultimate 3000 Nano and Capillary LC Systems
- Maintenance and Troubleshooting for Dionex Ultimate Nano and Capillary LC Systems
- Introduction to Accelerated Solvent Extraction (ASE)
- Maintenance and Troubleshooting for Accelerated Solvent Extraction

Benefits of On-Site Training

- The course will accommodate the experience level of your analysts.
- The course topics can be focused on your chromatography system and application.
- You control and determine the class size – up to six people.
- On-site courses minimize employee travel time and expense.



Training Schedule 2014



COURSE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Introduction to Chromeleon 7 – Level 1		04				17			16			02
Next Steps in Chromeleon 7 – Level 2		05				18			17			03
Introduction to Chromeleon 6.8 – Level 1				09						15		
Next Steps in Chromeleon 6.8 – Level 2				10						16		
Ion Chromatography – New Operator Course		18		29		24			23			
Ion Chromatography – Maintenance and Troubleshooting		19		30		25			24			
New Operator course for Ultimate 3000 HPLC Systems						19						
Maintenance and Troubleshooting for Ultimate 3000 HPLC Systems						20						
ITQ Operations			25-28							28-31		
ISQ Operations				01-04					02-05			
Headspace Gas Chromatography				08							04	
Triplus Robotic Sampler Handler				09-10							05-06	
TSQ 8000 Operations					12-15						25-28	

Hemel Hempstead, tuition in English.



Trace Elemental Analysis

Optimize Your Processes. From AA to ICP, our experience and intrinsic knowledge of the market will help you expedite applications and streamline your process for maximum efficiency and productivity. Whether it's environmental, petrochemical or clinical, our experienced instructors will prepare you to operate your instrument and software with ease.

Unity™ Lab Services
Part of Thermo Fisher Scientific



Trace Elemental Analysis

Atomic Absorption (AA) Spectroscopy



Training: Flame AA Operations

Course Objective:

This course is designed for the Thermo Scientific AA Operator and covers all the essential topics related to flame optimization, method development and efficient operation of the instrument.

The course material includes:

- Absorption and Emission Theory
- Hardware: Set up, Use and Optimization
- Correction System for Non-Specific Absorptions
- Influence of Experimental Parameters
- Absorption and Emission Analysis
- Non-Specific Absorption and Chemical Interferences
- Maintenance
- Sample Solubilization
- Quality Control Tests

Training: Furnace AA Operations

Course Objective:

This course is designed for the Thermo Scientific AA Operator and covers all the essential topics related to optimization of a furnace AA system, method development and efficient operation of the instrument.

The course material includes:

- Theory of Absorption
- Development of an Analytical Method
- Hardware : Set Up, Use and Optimization
- Non-Specific Absorption and Matrix Modifiers
- Correction System for Non-Specific Absorptions
- Maintenance
- Sample Solubilization
- Influence of Experimental Parameters
- Quality Control Tests



Training: ICP-OES Operations

Course Objective:

The aim of this is to improve the theoretical knowledge and practical skills of the Thermo Scientific ICP-OES user. The course will cover atomic spectroscopy theory, plasma related topics, instrument hardware, tuning and method set-up, functionalities of the software package, basic maintenance and troubleshooting.

The course material includes:

- Atomic Spectroscopy Theory
- Instrument Optimisation
- Identifying and Overcoming Interferences in ICP
- Overview of Software Packages available
- Quantitative Analysis
- Instrument Hardware, Maintenance and Troubleshooting

Trace Elemental Analysis Inorganic Mass Spectrometry



Implementation of the New USP Chapters in the Laboratory

Course Objective:

The aim of this training course is to assist with the implementation of the new USP Chapters 232 and 233 in the Inorganic Laboratory and ensure compliance. The course focuses on users of the Thermo Scientific iCAP™ and/or iCAP™ Q products and covers all aspects of method development under the USP guidelines.

The course material includes:

- Theory of Inorganic Analysis (ICP-OES and/or ICP-MS)
- Introduction to ICP-OES and/or ICP-MS
- iTEVA and/or QTegra Software
- Principles of Sample Preparation
- Reagents Used in the 232 and 233 USP Chapters
- Method Development
- Interferences and Contamination
- Instrument Optimization and Calibration
- Data Management and Processing
- Routine Instrument Maintenance

Inorganic Sample Preparation

Course Objective:

The aim of this training course is to familiarize analysts with methods for inorganic sample preparation using the Milestone products. During the course, the various microwave digestion systems and the different acid reagents typically used will be discussed. The benefits and disadvantages of the sample preparation techniques will be explored using a hands-on approach and real samples.

The course material includes:

- Principles of Inorganic Sample Preparation
- Reagents Typically Used
- Ethos and Start D Microwave Systems
- UltraWave Microwave System
- Functionality of the Milestone Software
- Routine Maintenance

Training Schedule 2014



COURSE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ICP-OES Operations			18-20		20-22				9-11			02-04



Hemel Hempstead, tuition in English.

Inorganic Mass Spectrometry

Increase Your Efficiency. Designed to offer both practical and theoretical training, the Inorganic Mass Spectrometry courses are taught by experienced and certified instructors. Covering a wide range of techniques our courses ensure that the customer interests and needs are covered regardless of the uniqueness of their application.





iCAP Q Operations

Course Objective:

This course covers the fundamentals of the Thermo Scientific iCAP™ Q system operation and maintenance with a mixture of lectures and practical sessions. Topics include atomic spectroscopy theory, plasma description, hardware, tuning and method setup, functionalities of the software package (Q Tegra), basic maintenance and troubleshooting.

The course material includes:

- Quadrupole ICP-MS Fundamentals
- ICP-MS Analysis and Method Development
- Analytical Issues: Sample Preparation, Matrix Effects
- Calibration
- Data Management and Processing
- Qualification and Performances Report
- Maintenance
- Interferences and Solutions
- Flatapole Technology (Q Cell)
- Multi-Elements and Multi-Modes Analysis

Inorganic Mass Spectrometry

ICP-MS, MC-ICP-MS, GDMS, TIMS



ELEMENT 2 / ELEMENT XR Operator Training

Course Objective:

The inductively coupled plasma mass spectrometer training courses are designed for customers who have purchased either the Thermo Scientific ELEMENT™, ELEMENT2 or ELEMENT XR. Please note that all hands-on training will be made using the ELEMENT2/XR. The general objective of this course is to familiarize the customer with the instrument features, operation and maintenance. Topics that will be covered include system optimization, mass calibration, data acquisition (using a variety of calibration techniques) and interpretation. Selected additional topics, depending on the customer's installed equipment and its availability in the application laboratory, include cold plasma analysis, isotope ratio analysis and the use of additional sample introduction equipment (for example laser ablation and desolvating or ultrasonic nebulizers) in conjunction with the ELEMENT2/XR.

NEPTUNE / NEPTUNE Plus Operator Training

Course Objective:

The Multi-Collector ICP-MS training courses are designed for customers who have purchased the Thermo Scientific NEPTUNE™ or NEPTUNE Plus™ systems. The general objective of these training courses is to familiarize the new users with the instrument features, basic instrument operation, checks and maintenance, collector system methods as well as software, and troubleshooting. Basic Operator courses as well as courses focused on instrument maintenance only are available.

Inorganic Mass Spectrometry

ICP-MS, MC-ICP-MS, GDMS, TIMS



ELEMENT GD Operator Training

Course Objective:

The glow discharge mass spectrometer instrument training courses are designed for customers who have purchased the Thermo Scientific ELEMENT GD. The general objective of this training course is to familiarize the customer with the instrument features, operation and maintenance. Topics that will be covered include system optimization, mass calibration, and data acquisition. Selected additional topics will be trained, depending on the customer's installed equipment and its availability in the application laboratory in conjunction with the ELEMENT GD.

TRITON / TRITON Plus Operator Training

Course Objective:

The TRITON operator training courses are designed for customers who have purchased the Thermo Scientific TRITON™ or TRITON Plus™. The general objective of these training courses is to familiarize with the instrument features, basic instrument operations, check and maintenance, collector system, methods as well as software, and trouble shooting. Basic Operator courses as well as courses focused on instrument maintenance only are available.



IRMS OPERATOR TRAINING with GC IsoLink and GC Peripherals, ConFlo III/IV, Elemental Analyzer and TC/EA Peripherals

Course Objective:

The general objective of this training course is to familiarize the operator with Thermo Scientific DELTA V Plus and DELTA V Advantage instrument features, vacuum system, ion source setting, basic instrument operations, instrument check and maintenance basics, software and trouble shooting. It intends to provide the best understanding for the interfaces and sample preparation units GC IsoLink, ConFlo III/IV, EA Elemental Analyzer and EA peripherals.

IRMS OPERATOR TRAINING WITH GasBench II, ConFlo III/IV Interface, Elemental Analyzer and TC/EA Peripherals

Course Objective:

The general objective of this course is to familiarize the operator with the Thermo Scientific DELTA V Plus and DELTA V Advantage instrument features, vacuum system, ion source setting, basic instrument operations, instrument check and maintenance basics, software and troubleshooting. It intends to provide the best understanding for the interfaces and sample preparation units Thermo Scientific GasBench II and ConFlo III/IV, Elemental Analyzer and EA peripherals.

IRMS OPERATOR TRAINING with GC IsoLink and GC Peripherals and GasBench II

Course Objective:

The general objective of this training course is to familiarize the operator with the Thermo Scientific DELTA V Plus and DELTA V Advantage instrument features, vacuum system, ion source setting and cleaning, basic instrument operations, instrument check and maintenance basics, software and troubleshooting. It intends to provide the best understanding for the interfaces and sample preparation units GC and GasBench II.



IRMS Operator Training with Dual Inlet and Peripherals

Course Objective:

The general objective of this course is to familiarize the operator with the Thermo Scientific DELTA V Plus and DELTA V Advantage instrument features, vacuum system, ion source setting, basic instrument operations, instrument check and maintenance basics, software and trouble shooting. It intends to provide the best understanding for Dual Inlet operation with peripherals including Multiport and Microvolume, and Kiel IV Carbonate Device.

IRMS Operator Training with LC IsoLink and LC Peripherals

Course Objective:

The general objective of this course is to familiarize the operator with the Thermo Scientific DELTA V Plus and DELTA V Advantage instrument features, vacuum system, ion source setting, basic instrument operations, instrument check and maintenance basics, software and trouble shooting. It intends to provide the best understanding for the interfaces and sample preparation unit LC IsoLink.

Trace Elemental Analysis Inorganic Mass Spectrometry



Implementation of the New USP Chapters in the Laboratory

Course Objective:

The aim of this training course is to assist with the implementation of the new USP Chapters 232 and 233 in the Inorganic Laboratory and ensure compliance. The course focuses on users of the Thermo Scientific iCAP™ and/or iCAP™ Q products and covers all aspects of method development under the USP guidelines.

The course material includes:

- Theory of Inorganic Analysis (ICP-OES and/or ICP-MS)
- Introduction to ICP-OES and/or ICP-MS
- iTEVA and/or QTegra Software
- Principles of Sample Preparation
- Reagents Used in the 232 and 233 USP Chapters
- Method Development
- Interferences and Contamination
- Instrument Optimization and Calibration
- Data Management and Processing
- Routine Instrument Maintenance

Inorganic Sample Preparation

Course Objective:

The aim of this training course is to familiarize analysts with methods for inorganic sample preparation using the Milestone products. During the course, the various microwave digestion systems and the different acid reagents typically used will be discussed. The benefits and disadvantages of the sample preparation techniques will be explored using a hands-on approach and real samples.

The course material includes:

- Principles of Inorganic Sample Preparation
- Reagents Typically Used
- Ethos and Start D Microwave Systems
- UltraWave Microwave System
- Functionality of the Milestone Software
- Routine Maintenance

Training Schedule 2014



COURSE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
iCAP Q Operations			04-06				08-10			14-16		



Hemel Hempstead, tuition in English.



Molecular Spectroscopy

Maximize Your Performance. Our Molecular Spectroscopy training courses offer students the opportunity to move from fundamental to advanced knowledge levels. Attendees are encouraged to bring samples to instrument operations courses.

Unity™ Lab Services
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Training: Fundamentals of FT-IR Analysis

Course Objective:

The Thermo Scientific Fundamentals of FT-IR Analysis course is designed to provide all the tools necessary for the user that would like to expand their knowledge of analysis with FT-IR spectrometers. The course material is presented as a combination of software training, instrumental demonstrations, and hands-on activities through the use of desktop computers and instruments in a laboratory setting.

- Basic FT-IR Theory
- Creating Experiment Files
- Creating User Configurations
- Transmission Analysis with FT-IR
- Attenuated Total Reflectance (ATR) Theory and Data Collection
- Reflection Analysis using Sampling Accessories
- Post-Collection Data Manipulation
- Creating Custom User Reports
- Creating User Libraries and Optimizing Library Search Results
- An Introduction to Spectral Interpretation

Training: FT-IR Spectral Interpretation

Course Objective:

The Thermo Scientific FT-IR Spectral Interpretation Training Course is designed for people who desire an extensive review of the interpretation of mid-infrared spectra. It is designed to show students how to interpret FT-IR spectra for structural information.

The course material includes:

- FT-IR Theory and Principles of Organic Chemistry
- Alkanes, Alkenes and Alkynes
- Aromatics
- Carbon containing Alkyl Groups
- Ethers and Alcohols
- Amines, Amides, and Nitro Compounds
- Halides
- Polymers
- Inorganics
- The use of Interpretive Aids

How to Register

For further information or to register on any of the courses listed, please use the following:

Email: unity.training.eu@thermofisher.com

Phone: + 44(0) 1442 233555

Fax: +44(0) 1442 233667

Web: www.unitylabservices.com

Thermo Fisher Scientific
Stafford House
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U.K.



Cancellation Policy

- We reserve the right to cancel any course, 30 calendar days prior to the scheduled start date, due to insufficient enrollment.
- We reserve the right to change the venue of the course, 30 calendar days prior to the scheduled start date.
- In the event of a venue change, you will be notified by a Unity Lab Services representative.
- Thermo Fisher Scientific will not be responsible for expenses incurred (for example, non-refundable airline reservations) if the course is cancelled or moved 30 calendar days prior to the scheduled start date.
- Attendee substitutions may be made at any time upon notification of the Training Institute Co-ordinator.
- Enrollment in your desired training course(s) is not guaranteed until receipt of the registration documents and confirmed method of payment.

Refund Policy

- 100% refund for cancellations received 15+ business days prior to course date.
- 50% refund for cancellations received 10-15 business days prior to course date.
- No refund for cancellations received fewer than 10 business days prior to course date.
- No refund for no-shows.

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