AnthiasConsulting Ltd

Bridging the Gap

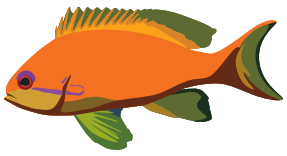
GC/GC-MS Training Courses

Comprehensive - Affordable - Instrument Independent

"This course has 'removed a veil from my mind'. I have not done GC for several years and this has provided me with a very sound foundation on which I can now build for a more advanced GC development.

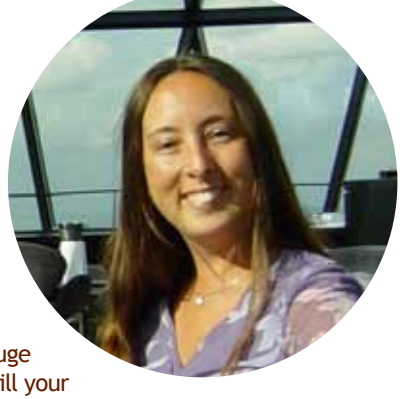
The level of detail in the Why and Where of GC was excellent and therefore allowed one to readily understand the information in the afternoon session which needed more interpretation".

Andrea Jordan, Post Graduate Researcher, The Absolute Basics of GC & GC-MS course



www.anthias.co.uk

Who are we?



Anthias Consulting is an independent training and consultancy business specialising in Gas Chromatography and GC-MS.

With more than 15 years of hands-on experience in Gas Chromatography and related techniques, on a wide range of manufacturers instrumentation (including Agilent, Thermo, Varian, PerkinElmer, Shimadzu, Leco, CTC, ATAS, Gerstel, Markes), in a huge variety of applications and industries, we aim to fulfill your requirements whatever your needs may be.

Our training team is led by senior consultant and director, Diane Turner, who founded Anthias Consulting in 2005 to share her expertise and knowledge in GC & GC-MS, working both directly with manufacturers and their customers, as well as end users themselves.

Expert analytical chemist Stuart Pattinson also oversees training, bringing with him over 27 years of experience in instrumental analysis across numerous industries.

We provide training to "bridge the gap", bringing experience of all aspects of the customer: supplier interface from both sides, providing an insight into the needs of each. We can help both instrument manufacturers and the analysts who use the scientific instrumentation, from consultancy advice to training, to get the best out of your analytical instruments.

Why choose Anthias courses?

- Our courses cover the full expanse of gas chromatography
- A strong practical and application focus, with lots of tips
- Taught by practicing analytical chemists with current skills
- Non-manufacturer specific training, unbiased advice
- Flexible training available for all levels of experience
- Complete Course recognised by RSC for professional development
- Plenty of opportunities to ask questions tailored to your needs
- Presented in English with visuals and props for clarity
- Discounts available for early bird, student and group bookings
- Price includes course manual, lunch and refreshments

Keep up with Anthias on Twitter @anthiasconsult

Which course?

Anthias Consulting Ltd offers two types of courses to suit your needs: Hands-on courses and classroom-based training courses.

The new range of **1-day Hands-On Courses** will cater to those eager to combine theory with practice. With a maximum of 4 delegates per course, 50% of the course time is spent on hands-on practicals in a lab environment.

Classroom-based courses vary from 1 to 5 days and allow attendees to boost their knowledge, confidence and results in all aspects of gas chromatography and GC-MS. The courses have a strong practical focus, which can be applied the instant you return to your lab. Training is available for all levels of experience.

Our courses

Hands-on courses:

- Hands-on Gas Chromatography
- Hands-on GC Maintenance
- Hands-on GC Troubleshooting
- Hands-on Gas Chromatography-Mass Spectrometry
- Hands-on GC-MS Maintenance
- Hands-on GC-MS Troubleshooting
- Hands-on Headspace
- Hands-on SPME & SBSE
- Hands-on Programmable Temperature Vapourisers
- Hands-on Large Volume Injection
- Hands-on Thermal Desorption
- Hands-on Pyrolysis
- Hands-on GCxGC software

Classroom-based courses:

- Absolute Basics of GC & GC-MS
- Practical Essentials of GC & GC-MS
- GC & GC-MS Clinic
- Complete GC & GC-MS

What is a hands-on course?

A hands-on course is a one-day course, mixing theory and hands-on practicals in a lab environment. Small groups allow every individual's needs to be met and half of your time will be spent in the lab.

The knowledge you will gain spans both Gas Chromatography and Mass Spectrometry and can be applied to both. You can mix and match hands-on courses to meet your exact requirements, allowing you to bridge the gaps in knowledge that you want to fill.

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Gas Chromatography

Spend the first part of the day learning the theory of gas chromatography and then use this knowledge to create split and splitless methods, perform manual and liquid autosampler injections and change oven temperature programs to optimise the separation of analytes detected with an FID.

Covering the gas supplies, liquid autosampler, hot split and splitless injections, the analytical column and detection by FID and ECD, this course is suitable for all levels of knowledge.

GC Maintenance

This one day course combines learning the reasons why maintenance is required, what happens if maintenance isn't performed and the signs of when maintenance is needed along with practicals carrying out maintenance on a gas chromatograph.

Covering maintenance of the liquid autosampler, inlet, column and FID/ECD, this course is suitable for those who have some knowledge of GC and beginners who have attended the "Hands-on" Gas Chromatography course.

GC Troubleshooting

This one day course combines learning how to go about troubleshooting a GC instrument and what problems can occur, with real problem solving on the instrument and data analysis software.

Covering troubleshooting the gas supply, autosampler, inlet, column and detector, this course is suitable for people who have some knowledge of GC and beginners who have attended the "Hands-on" Gas Chromatography course.

Gas Chromatography-Mass Spectrometry

Spend the first part of the day learning the theory of mass-spectrometry and then use this knowledge to create GC-MS methods, perform injections and change MS parameters to see the effects.

Covering MSD theory and practicals on common GC mass spectrometers, this course is suitable for all levels of knowledge.

Please note: this course will only cover the MSD not the GC, refer to the 'GC' courses for training on that part of the instrument.

GC-MS Maintenance

This one day course combines learning the reasons why maintenance is required, what happens if maintenance isn't performed and the signs of when maintenance is needed along with practicals carrying out maintenance on mass spectrometers.

Covering maintenance on common GC mass spectrometers including tuning, cleaning and more, this course is suitable for people who have some knowledge of GC-MS and beginners who have attended the "Hands-on" Gas Chromatography-Mass Spectrometry course.

Please note: this course will only cover the MSD not the GC, refer to the 'GC' courses for training on that part of the instrument.

GC-MS Troubleshooting

This one day course combines learning how to go about troubleshooting a GC-MS instrument and what problems can occur, with real problem solving on the instrument and data analysis software.

Covering troubleshooting the GC-MS including leaks, tune problems, MS method and identifying if the GC or the MSD is the problem, this course is suitable for people who have some knowledge of GC-MS and beginners who have attended the "Hands-on" Gas Chromatography and "Hands-on" Gas Chromatography-Mass Spectrometry courses.

Headspace

Spend part of the day learning the theory of static and dynamic headspace and how to modify samples to improve results, then use this knowledge to create HS methods, analyse samples and experiment with parameters to see the effects.

Covering static and dynamic headspace, this course requires some knowledge of GC or GC-MS.

SPME & SBSE

Spend part of the day learning the theory behind Solid-Phase Micro-Extraction and similar techniques like Stir-Bar Sorptive Extraction and how to modify samples to improve results, then use this knowledge to create SPME methods, analyse samples and experiment with parameters to see the effects.

Covering SPME and related techniques like SBSE, this course requires some knowledge of GC or GC-MS.

Programmable Temperature Vapourisers

This one day course focuses on the added functionalities of PTVs over standard hot inlets as a truly multi-mode inlet. Part of the day will be spent looking at the theory and advantages of cold split and cold splitless injections and the uses for cold-trapping, high final inlet temperatures, large volume injections and additional techniques like thermal desorption and extraction. The remainder of the day will be spent in the lab creating, using and optimising cold injection methods to analyse thermally labile and high molecular weight samples and looking at other PTV techniques.

Covering all PTV techniques, this course requires some knowledge of GC or GC-MS.

Please note: this course will not cover large volume injections in great detail, please refer to the LVI course for more detail on this technique.

Large Volume Injection

This one day course combines the theory and advantages behind the different large volume injection techniques with "hands-on" practicals to create, use and optimise LVI methods in the lab. Covering Large Volume Injection (LVI) methods, this course requires some knowledge of GC or GC-MS.

Please note: this course will cover using PTV inlets for large volume injections only, please refer to the PTV course for other PTV techniques.

Thermal Desorption

This one day course begins with the theory of thermal desorption, types of samples that can be analysed using this technique, types of tube packing materials and how to collect samples. This knowledge is then used to create TD methods, collect and analyse samples and experiment with parameters to see the effects.

Covering thermal desorption of gas-phase and solid-phase samples, this course requires some knowledge of GC or GC-MS.

Pyrolysis

Spend part of the day learning the theory behind the different pyrolysis techniques and then put this knowledge into practice in the lab, creating pyrolysis methods, analysing samples and changing parameters to see the effects.

Covering analytical pyrolysis, this course requires some knowledge of GC or GC-MS.

GCxGC software

Learn the theory and advantages of comprehensive multi-dimensional gas chromatography and then experience the power of GCxGC by analysing and experimenting with some previously acquired data using GC Image software.

This course will cover GCxGC and GCImage software. This course requires knowledge of GC or GC-MS.

Please note: due to the longer run times with GCxGC, analysis of samples is not possible during this one day course. A greater knowledge of GCxGC will be gained from experimenting, under tuition, with real data using the software.

Hands-on courses

Classroom-based courses

Absolute Basics of GC & GC-MS (1 day)

Audience: Absolute beginners in gas chromatography and GC-MS. The what, how, why, where and when of GC & GC-MS. This course covers the absolute basics and is a good starting point for beginners prior to attending the Practical Essentials of GC & GC-MS or Complete GC & GC-MS courses. Topics covered (to a basic level) include:

- Instrumentation
- Sample types
- Analytes
- Chromatograms
- Analytical columns
- Stationary phases
- Mobile phases
- Separation process
- GC oven
- Sample introduction
- On-column injections
- Split & splitless injections
- Detection
- Flame ionisation detector (FID)
- Electron capture detector (ECD)
- Mass selective detector (MSD)
- Qualitative data analysis
- Quantitative data analysis
- Sampling techniques
- Applications

Practical Essentials of GC & GC-MS (3 days)

Audience: Some experience of GC or GC-MS is required or participants have attended the Absolute Basics of GC & GC-MS course. Topics covered (to advanced level) include:

Day 1	Day 2	Day 3
Introduction to GC	Analytical columns	Sampling
Gases & plumbing	Backflushing	Thermal desorption, Pyrolysis
Sample introduction: inlets	Detectors: FID, TCD, ECD, etc.	Headspace - static & dynamic
On-column injection	MSD: vacuum, ionisation, mass analysers & detectors	Solid-Phase Extraction, SPME, SBSE
Split & splitless injections	Quadrupole, ion trap, TOF, MS/MS, QQQ, magnetic sector	Purge & Trap, Liquid-Liquid Extraction
Large volume injection (LVI)	Data analysis: Libraries, Qualitative, Quantitative & Semi-quantitative analysis	Automation, Derivatisation, etc.

For more details on courses email: courses@anthias.co.uk

"Diane has a wealth of knowledge on a broad range of GC-MS applications and her ability to deliver this knowledge to people of varying abilities is extremely valuable."

L. Kelly, Markes International

The GC & GC-MS Clinic (2 days)

Audience: Some experience of GC or GC-MS is required or participants have attended the Absolute Basics of GC & GC-MS course. Topics covered (to advanced level) include:

Day 1 (4)	Day 2 (5)
Method development & optimisation	Maintenance: from septa to liners to pumps & detectors to MSD tuning to contamination
Case study: choosing instrumentation & techniques, developing methods	Identifying when maintenance is required
Advanced techniques taster (basic level):	Troubleshooting: Preparing for problems
Selective discrimination	Identifying problems
Deconvolution, Chemometrics	The troubleshooting process
Multi-dimensional GC (GCxGC, heartcutting)	Practical: troubleshooting chromatograms

The Complete GC & GC-MS Course (5 days)

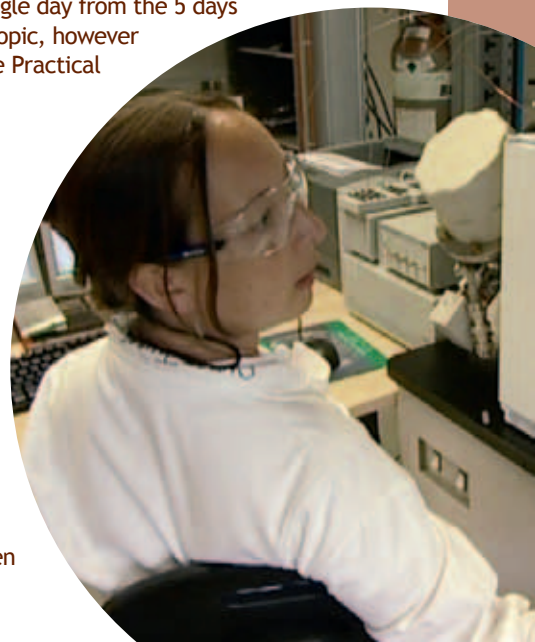
RSC | Advancing the Chemical Sciences

Recognised by the Royal Society of Chemistry for purposes of Continuing Professional Development (CPD)

Audience: GC or GC-MS users who wish to learn the techniques then continue on to develop methods and troubleshoot instruments. Complete beginners are advised to attend the Absolute Basics of GC & GC-MS first.

Topics: This course consists of the 3-day Practical Essentials of GC & GC-MS and the 2-day GC & GC-MS Clinic courses. Placed back to back, analysts can attend both courses at once, or alternatively, go away and implement them, then come back for the 2-day GC & GC-MS Clinic at a later date.

Individual days: You can also choose to attend a single day from the 5 days listed to brush up your knowledge on a particular topic, however it is advised to attend the full course or at least the Practical Essentials of GC & GC-MS to attend days 4 or 5.



Dates and Booking

Training Course Calendar

Courses take place all year round across the UK and Europe, usually at accessible Universities. Please visit www.anthias.co.uk for the latest calendar and details of venues. Reserve a course by completing the attached booking form or completing it online at www.anthias.co.uk.

After making a booking, you will be sent a receipt of your course booking and a pre-course questionnaire. Instructions on course venues, local hotels, airlines and course venue directions will then follow by email.

1. All courses and material will be presented in native English language using high visual content, but the course assumes a reasonable understanding of English on every attendees' part.

2. All course attendees are requested to complete a pre-course questionnaire in order to ascertain their level of knowledge. Contact will be made by the course instructor in case of any concerns prior to the course.

3. All payment for courses must be received in advance of attendance of the course.

4. Anthias Consulting does not accept responsibility for flights or hotel bookings or their cancellation policies unless booked through us. Course attendees therefore book flights and hotels at their own risk.

5. Course cancellation will incur a penalty of a deductible amount per person: -50% up to 8 weeks before the course; -75% up to 4 weeks before the course; -100% up to 2 weeks before the course. Under exceptional circumstances, an alternative course may be offered without incurring any penalty.

6. A minimum of 4 attendees will be required for a course to proceed. Anthias Consulting Ltd reserves the right to cancel a course with a full refund of course fees, or provision of an acceptable alternative course, due to under subscription or other unforeseeable circumstances without incurring any due penalty. Course attendees will be notified at least 2 weeks in advance by email of any changes to the course schedule for which they have registered. Anthias Consulting Ltd will not be liable for any costs incurred by airlines or hotels as a result of any changes, or any implication of assignments at work for which training is required.

7. Delegates and their companies are responsible for ensuring they have adequate travel permits and visas for course attendance, as well as adequate travel & medical insurance cover. Anthias Consulting cannot assist with any visa applications.

8. Delegates are not permitted to bring samples onto the courses, there most likely will not be an instrument available to analyse such samples. We advise delegates to bring in their existing chromatograms for discussion instead (where appropriate, according to the course), although Anthias Consulting cannot promise to answer delegates' problems relating to their individual areas of work.

For more information on the courses or terms & conditions, contact
courses@anthias.co.uk

1 Hamden Way,
Papworth Everard,
Cambridgeshire,
CB23 3UG

w: www.anthias.co.uk
e: courses@anthias.co.uk,
t: +44 (0)1480 831262

Keep up with Anthias on Twitter @anthiasconsult or Skype: anthiasconsulting