



**Bringing Scientific & Technical  
Resources to the African Continent**

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## **HANDS-ON GAS CHROMATOGRAPHY(GC)AND MASS SPECTROMETRY (GC GC-MS TRAINING 27<sup>th</sup> – 31<sup>st</sup> MAY 2024.**

### **What will you learn on this course?**

This course provides the theory of gas chromatography (GC) and mass spectrometry (MS) essential to any participant, along with hands-on practical elements in the laboratory to practice and re-enforce the theoretical knowledge. These courses are 20% theory and 80% practical in a lab environment.

This course addresses gases and plumbing, sample introduction, analytical columns, GC detectors (FID and ECD), mass-spectrometry and data analysis. The knowledge is then used to create methods, perform injections and change parameters to see the effects. The course discusses the need for maintenance along with practical's to carry out maintenance on both a GC and a GC-MS system such as liquid auto sampler, inlet, columns, FID/ECD and Quadruple MS including tuning and ion source cleaning. A day is spent on troubleshooting a GC or GC-MS instrument and learning what problem can occur, with solving on the instruments and data analysis software.

### **Advantages of the Training Program:**

GC-MS finds application in fields like Medicine, criminal forensics, environmental monitoring and cleaning, explosives detection, etc. Thus the training is beneficial for the people who are working industries which relate to chemicals, pharmaceuticals, food, oils, agriculture, cosmetics, analytical testing laboratories and many others.

<b>DAY 1</b>	<b>EVENTS</b>
<b>09.00-09.30</b>	<ul style="list-style-type: none"> <li>Registration and climate setting</li> </ul>
<b>09.30-10.00</b>	<ul style="list-style-type: none"> <li>Introduction &amp; instrumentation, of, GC, parts, function. and operations of individual components, GC configuration.</li> </ul>
<b>10.00-10.30</b>	<i>Tea Break</i>
<b>11.00-12.30</b>	<ul style="list-style-type: none"> <li>Cont: Introduction &amp; instrumentation, of, GC, parts, function. and operations of individual components, GC configuration.</li> </ul>
<b>12.30-14.00</b>	<i>Lunch Break</i>
<b>14.00-16.30</b>	<ul style="list-style-type: none"> <li>Introduction &amp; instrumentation, of GC-MS, parts, functions and operations of individual components.</li> </ul>
<b>DAY 2</b>	
<b>9.00-10.30</b>	<ul style="list-style-type: none"> <li>GC-MS Configuration, parts and components Procedure for powering on the GC/GC-MS, pumping down</li> </ul>
<b>10.30-11.00</b>	<i>Tea Break</i>

<b>11.00-12.30</b>	<ul style="list-style-type: none"> <li>Explaining Pre-Acquisition software: Tuning and Calibration, Calibration report generation, MS Tune File, Explanation of MS Method and GC Method</li> </ul>	
<b>12.30-14.00</b>	<i>Lunch Break</i>	
<b>14.00-16.30</b>	<ul style="list-style-type: none"> <li>Introduction to Data acquisition software, System and method Parameter setup.</li> <li>Set up method for Full Scan and Single Ion Monitoring Operation, On-column injection, Split/Split less injection</li> </ul>	
<b>DAY 3</b>		
<b>9.00-10.30</b>	<ul style="list-style-type: none"> <li>GC/GC/MS Sample Preparation</li> </ul>	
<b>10.30-11.00</b>	<i>Tea Break</i>	
<b>11.00-12.30</b>	<ul style="list-style-type: none"> <li>GC/GC/MS Sample Preparation</li> </ul>	
<b>12.30-14.00</b>	<i>Lunch Break</i>	
<b>14.00-15.30</b>	<ul style="list-style-type: none"> <li>Introduction to Quantitative software, Qualitative software, Library search Concepts, integration, report generation.</li> </ul>	
<b>DAY 4</b>		
<b>9.00-10.30</b>	<ul style="list-style-type: none"> <li>Creating sequence for multiple sample analysis.</li> <li>Creating Calibration, curve and producing report files</li> <li>Individual sample analysis</li> </ul>	
<b>10.30-11.00</b>	<i>Tea Break</i>	
<b>11.00-12.30</b>	<ul style="list-style-type: none"> <li>Qualitative and quantitative data analysis with a set file</li> <li>Quantitation using single internal standard</li> </ul>	
<b>12.30-14.00</b>	<i>Lunch Break</i>	
<b>14.00-15.30</b>	<ul style="list-style-type: none"> <li>Quantitation using external standard</li> </ul>	
<b>DAY 5</b>		
<b>9.00-10.30</b>	<ul style="list-style-type: none"> <li>Interpreting MS data, ie positive &amp; negative ion ionization</li> </ul>	
<b>10.30-11.00</b>	<i>Tea Break</i>	
<b>11.00-12.30</b>	<ul style="list-style-type: none"> <li>Discussion of results and possible deviations</li> </ul>	
<b>12.30-14.00</b>	<i>Lunch Break</i>	
<b>14.00-15.00</b>	<ul style="list-style-type: none"> <li>Directors speech and issue of certificates</li> </ul>	
<b>DATES</b>	<b>COST</b>	<b>VENUE</b>
<b>27<sup>th</sup> – 31<sup>st</sup> May 2024</b> <b>Deadline: 15<sup>th</sup> May 2024</b>	<b>Cost Kes. 92,800.00 or USD 928.00</b>	<b>NAIROBI</b>