



Bringing Scientific and Technical resources to the African Continent (NITA/TRN/875)

HANDS ON PRACTICAL TRAINING ON ADVANCES IN ATOMIC ABSORPTION SPECTROSCOPY **25th – 29th SEPTEMBER 2023**

Course Overview

A comprehensive 5 days' course designed to increase expertise and optimize results for all users of AAS. Understanding sample introduction and optimization of instrument performance are important subject areas within this 5 days' course. Interactive Training sessions and practical exercises are used to reinforce key learning points.

Who is this course for?

The training is useful for those who are working in industries like Oil Industries, Cosmetics, Chemicals, Food & Agriculture, Water Testing, Pharmaceuticals as well as the Analytical Testing Laboratories and various others.

Previous knowledge

Background knowledge of AAS Spectrometry may be useful but not necessary, as all the essentials are covered in the course. Previous experience using AAS equipment is very important.

What you will learn & Why

1. Why have calibration schedule
2. Why AAS is particularly suitable for Analysis
3. How AAS can be used for the analysis of ultra-trace metal elements (0.0005-1000ppm)
4. Application of AAS to non-metallic elements (e.g. S, P)

5-DAYS PROGRAMME FOR TESTING, RESEARCH AND QUALITY CONTROL LABORATORIES

	Morning	Afternoon
Day One 25 th Sept. 2023	Opening Remarks Introduction of facilitators and meeting participants <ul style="list-style-type: none"> Objectives of the training, expected outcomes and review of the agenda 	Laboratory session <ul style="list-style-type: none"> Learning components of AAS, i.e. Assembling the sample introduction system AAS gas requirements Consumables and spares
Day One Cont.....	Introduction <ul style="list-style-type: none"> Principles of spectroscopy Principles & operation of AAS 	<ul style="list-style-type: none"> Introduction to AAS technique, Basic Principle, its Applications and Uses in various fields.
Day Two 26 th Sept. 2023	Sample preparation techniques <ul style="list-style-type: none"> Wet digestion Dry ashing Fusion 	Laboratory session <ul style="list-style-type: none"> Preparation of organic sample Preparation of inorganic samples Preparation of difficult samples
Day Two Cont.....	<ul style="list-style-type: none"> Microwave assisted digestion 	<ul style="list-style-type: none"> Software basic and instrument set-up
Day Three 27 th Sept. 2023	Calibration methods <ul style="list-style-type: none"> Calibration curve Use of quality controls 	Laboratory session <ul style="list-style-type: none"> Preparation of standards Preparation of QCs Method development Sample analysis using AAS
Day Three Cont.....	<ul style="list-style-type: none"> Internal QCs – spiking, HRM, replicate testing External QCs – CRM, PTs, ILC 	<ul style="list-style-type: none"> Introduction and Hands-on practice on preparation of different types of samples for determination of heavy metals
Day Four 28 th Sept. 2023	<ul style="list-style-type: none"> Hands-on practice on preparation of different types of samples for determination of heavy metals 	<ul style="list-style-type: none"> Laboratory session Analysis of different types of food samples.
Day Four Cont.....	<ul style="list-style-type: none"> Analysis of different types of food samples. 	<ul style="list-style-type: none"> Analysis of different types of water samples
Day Five 29 th Sept. 2023	<ul style="list-style-type: none"> Analysis of data & uncertainty measurements Maintenance of AAS and Trouble-shooting covering all the possible problems 	<ul style="list-style-type: none"> Course overview Conclusion Presentation of certificates
Date: 25th – 29th September 2023 Deadline: 15th Sept. 2023	Cost Kes: 81,200.00 or USD 812.00 Per person	Sugar Research Institute - Kisumu