



Trainings & Events

Instrumental Calibration

Introduction:

Welcome to our short course on Instrumental Calibration! In this course, we will be discussing the importance and methods of calibrating scientific instruments used in various fields, such as chemistry, physics, and engineering.

Instrumental calibration involves comparing the output of an instrument to a known standard to determine any deviations or errors in the readings. This is essential in ensuring the accuracy and precision of experimental data and can lead to more reliable results and conclusions.

Throughout this course, we will explore various calibration techniques, including calibration curves, standard addition, and internal standards. We will also discuss common sources of error in instrumentation and how to mitigate them.

MARBLE ARCHES Training & Events

Tel: +6017-3370965 • WhatsApp: +6017-3370965

Email: info@marblearches.com • Website: www.marblearches.com

(Company No : 202203261259 (NS0275491-D))



MARBLE ARCHES

Trainings & Events

By the end of this course, you will have a solid understanding of the fundamentals of instrumental calibration and be equipped with the knowledge to apply these techniques in your own research or work. So, let's get started!

Training Period: 4 or 5 - Days

Targeted Groups:

This course was design to fit:

- ✓ Laboratory technicians
- ✓ Quality control professionals
- ✓ Engineers
- ✓ Researchers in the natural sciences
- ✓ Students in scientific or engineering fields
- ✓ Calibration and metrology professionals
- ✓ Individuals interested in learning about calibration methods

Course Objectives:

This course was designed to let the participants able to:

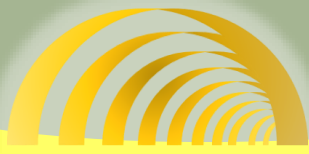
- ✓ Here are the objectives of a short course in instrumental calibration:
- ✓ Understand the importance of calibration and its impact on the accuracy and reliability of measurements.

MARBLE ARCHES Training & Events

Tel: +6017-3370965 • WhatsApp: +6017-3370965

Email: info@marblearches.com • Website: www.marblearches.com

(Company No : 202203261259 (NS0275491-D))



MARBLE ARCHES

Trainings & Events

- ✓ Learn about the various techniques and methods used for instrumental calibration, including their advantages and limitations.
- ✓ Understand the sources of error in calibration and learn how to minimize and manage these errors.
- ✓ Learn how to develop a calibration plan and document calibration procedures and results.
- ✓ Learn about the regulations and standards that govern calibration and how to comply with them.
- ✓ Learn about the latest developments in calibration technology and their potential applications.

Trainings & Events

MARBLE ARCHES Training & Events

Tel: +6017-3370965 • WhatsApp: +6017-3370965

Email: info@marblearches.com • Website: www.marblearches.com

(Company No : 202203261259 (NS0275491-D))



MARBLE ARCHES

Trainings & Events

Course Content:

Unit 1: Introduction to Instrumental Calibration

- ✓ Importance of calibration in scientific measurements
- ✓ Types of instruments that require calibration
- ✓ Overview of calibration techniques
- ✓ Sources of error in calibration

Unit 2: Calibration Standards and Procedures

- ✓ Types of calibration standards
- ✓ Preparation and handling of calibration standards
- ✓ Calibration procedures and protocols
- ✓ Quality control measures for calibration

Unit 3: Calibration Curve Method

- ✓ Theory and principles of the calibration curve method
- ✓ Practical implementation of the calibration curve method
- ✓ Sources of error and methods for error correction

MARBLE ARCHES Training & Events

Tel: +6017-3370965 • WhatsApp: +6017-3370965

Email: info@marblearches.com • Website: www.marblearches.com

(Company No : 202203261259 (NS0275491-D))



MARBLE ARCHES

Trainings & Events

Unit 4: Standard Addition Method

- ✓ Theory and principles of the standard addition method
- ✓ Practical implementation of the standard addition method
- ✓ Sources of error and methods for error correction

Unit 5: Internal Standard Method

- ✓ Theory and principles of the internal standard method
- ✓ Practical implementation of the internal standard method
- ✓ Sources of error and methods for error correction

Unit 6: Isotope Dilution Method

- ✓ Theory and principles of the isotope dilution method
- ✓ Practical implementation of the isotope dilution method
- ✓ Sources of error and methods for error correction

Unit 7: Instrument Maintenance and Troubleshooting

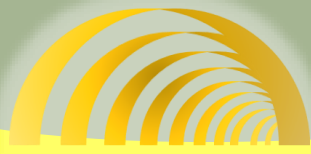
- ✓ Importance of instrument maintenance and calibration checks
- ✓ Common issues in instrument performance and troubleshooting methods
- ✓ Techniques for minimizing sources of error

MARBLE ARCHES Training & Events

Tel: +6017-3370965 • WhatsApp: +6017-3370965

Email: info@marblearches.com • Website: www.marblearches.com

(Company No : 202203261259 (NS0275491-D))



MARBLE ARCHES

Trainings & Events

Unit 8: Applications of Instrumental Calibration

- ✓ Applications of instrumental calibration in various fields such as chemistry, physics, and engineering
- ✓ Case studies and examples of instrumental calibration in research and industry
- ✓ Future directions and advancements in instrumental calibration

This course provides a comprehensive overview of instrumental calibration, covering the most important techniques and sources of error. The course is designed to focus on real-world applications and examples. Participants will gain a solid understanding of the principles and best practices of instrumental calibration, as well as the skills to apply these techniques in their own work.

MARBLE ARCHES Training & Events

Tel: +6017-3370965 • WhatsApp: +6017-3370965

Email: info@marblearches.com • Website: www.marblearches.com

(Company No : 202203261259 (NS0275491-D))