MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY (HPLC) METHODS EXPLAINED

"Master the Principles and Applications of HPLC for Accurate Analysis"

Schedule

Date	Venue	Fees (Online)
16 – 17 Dec 2026	Online	USD 700 per delegate

► **Available delivery methods:** Face-to-Face & Online Training

Introduction

High-Performance Liquid Chromatography (HPLC) is a cornerstone technique in analytical chemistry, widely used in pharmaceuticals, food, environmental, and industrial laboratories. This 2-day online training provides participants with a thorough understanding of HPLC principles, method development, and practical applications, enabling precise and reliable analysis of complex samples.

Through a combination of theoretical explanations, practical examples, and interactive exercises, participants will gain hands-on experience in HPLC method selection, optimization, and troubleshooting. The program equips professionals with the skills necessary to enhance laboratory accuracy, efficiency, and compliance with analytical standards.

Objectives

By the end of this course, participants will be able to:

- Understand the fundamentals and theory behind HPLC techniques.
- Develop, optimize, and validate HPLC methods for various applications.
- Interpret chromatograms and identify common analytical challenges.
- Apply troubleshooting strategies to improve method reliability.
- Ensure compliance with industry standards and regulatory requirements.

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Why Attend

- Gain comprehensive knowledge of HPLC methods and applications.
- Improve analytical accuracy and reproducibility in your laboratory.
- Learn practical strategies for method development and optimization.
- Enhance problem-solving skills for common HPLC challenges.
- Network with professionals in analytical chemistry and laboratory sciences.

Target Audience

This program is designed for:

- Analytical chemists and laboratory scientists
- Quality control and quality assurance professionals
- Pharmaceutical and biotech professionals
- Food and environmental testing laboratory staff
- Researchers and technical personnel involved in chromatography

Individual Benefits

Key competencies that will be developed include:

- Understanding of HPLC theory and instrumentation
- Ability to develop, optimize, and validate analytical methods
- Proficiency in chromatogram interpretation and troubleshooting
- Skills to ensure compliance with regulatory and industry standards
- Enhanced problem-solving and analytical thinking for laboratory tasks

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved laboratory accuracy, efficiency, and data reliability
- Compliance with industry and regulatory standards
- Enhanced capability in method development and problem-solving
- Reduced errors and improved analytical throughput
- Strengthened confidence in laboratory operations and results

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – Overview of HPLC principles, techniques, and instrumentation
- Case Studies – Real-world examples of method development and applications
- Workshops – Hands-on exercises in method optimization and troubleshooting
- Peer Exchange – Group discussions on analytical challenges and solutions
- Tools – Templates and guidelines for HPLC method development, validation, and reporting

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Course Outline

Detailed 2-Day Course Outline

Training Hours: 7:30 AM – 3:30 PM Daily Format: 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Fundamentals and HPLC Theory

Module 1: Introduction to HPLC (07:30 – 09:30)

- Principles and components of HPLC systems
- Types of HPLC and their applications
- Chromatographic theory and retention mechanisms

Module 2: HPLC Instrumentation and Setup (09:45 – 11:15)

- Understanding pumps, detectors, and columns
- System maintenance and calibration
- Safety and operational best practices

Module 3: Method Development Basics (11:30 – 01:00)

- Selecting stationary and mobile phases
- Optimizing separation and resolution
- Sample preparation techniques

Module 4: Troubleshooting and Data Interpretation (02:00 – 03:30)

- Identifying common HPLC issues
- Interpreting chromatograms
- Corrective actions and optimization strategies

Day 2: Advanced Applications and Practical Exercises

Module 1: Method Validation (07:30 – 09:30)

- Parameters for method validation
- Accuracy, precision, linearity, and robustness
- Documentation and regulatory compliance

Module 2: Specialized Applications (09:45 – 11:15)

- Pharmaceutical, environmental, and food analysis
- Case studies of complex sample analysis

Module 3: Advanced Troubleshooting (11:30 – 01:00)

- Resolving system performance and peak resolution issues
- Minimizing errors and improving reproducibility

Module 4: Workshop and Q&A (02:00 – 03:30)

- Practical exercises on method optimization and problem-solving
- Interactive discussion, feedback, and learning recap

Certification

Participants will receive a Certificate of Completion in High-Performance Liquid Chromatography (HPLC) Methods, validating their expertise in HPLC principles, method development, troubleshooting, and analytical applications.

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Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
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