MAWA EVENTS

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

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MICROBIAL ANALYSIS OF WASTEWATER- MASTER CLASS

"Master Advanced Techniques for Microbial Assessment and Wastewater Quality Management"

Schedule

Date	Venue	Fees (Face-to-Face)
11 – 15 Oct 2026	Doha, Qatar	USD 3495 per delegate

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

Introduction

The microbiological quality of wastewater is a critical factor in environmental health, industrial compliance, and public safety. This 5-day master class provides an in-depth understanding of microbial analysis techniques, from sample collection to advanced laboratory procedures, enabling participants to evaluate wastewater quality accurately.

Through hands-on workshops, case studies, and interactive discussions, participants will learn to identify, quantify, and interpret microbial contaminants in wastewater. The course equips environmental professionals, lab technicians, and engineers with the skills necessary for regulatory compliance, environmental monitoring, and operational efficiency in wastewater management.

Objectives

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

- Understand microbial populations and their relevance in wastewater treatment
- Apply sampling techniques and laboratory protocols for microbial analysis
- Identify and quantify bacteria, viruses, and other microorganisms in wastewater
- Interpret microbial data for regulatory compliance and operational decision-making
- Utilize advanced microbiological methods for wastewater quality assessment
- Enhance laboratory practices, safety, and quality control procedures

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Why Attend

- Gain practical, hands-on experience in microbial analysis of wastewater
- Learn modern laboratory techniques and analytical procedures
- Ensure compliance with environmental regulations and standards
- Improve wastewater monitoring and treatment efficiency
- Network with experts and share knowledge on best practices

Target Audience

This program is designed for:

- Environmental engineers and wastewater treatment professionals
- Laboratory technicians and microbiologists
- Quality control and compliance officers
- Industrial wastewater management personnel
- Researchers and consultants in environmental sciences

Individual Benefits

Key competencies that will be developed include:

- Practical skills in microbial identification and quantification
- Knowledge of sampling, preservation, and analysis protocols
- Ability to interpret results for operational and regulatory purposes
- Expertise in laboratory safety, quality assurance, and control
- Competence in applying advanced microbial analysis techniques

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved wastewater monitoring and treatment performance
- Compliance with environmental and safety regulations
- Enhanced laboratory efficiency and accuracy
- Better decision-making based on reliable microbial data
- Strengthened environmental management and reporting practices

Instructional Methodology

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

- Strategy Briefings – Overview of microbial analysis principles and wastewater microbiology
- Case Studies – Real-world examples of wastewater microbial monitoring
- Workshops – Hands-on exercises in sample collection, microbial identification, and quantification
- Peer Exchange – Group discussions on challenges and lessons learned in wastewater microbiology
- Tools – Laboratory protocols, templates, and analytical tools for microbial testing

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Course Outline

Detailed 5-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: Introduction to Wastewater Microbiology

Module 1: Fundamentals of Wastewater Microbiology (07:30 – 09:30)

- Microbial communities in wastewater
- Role of microorganisms in wastewater treatment

Module 2: Sampling Techniques (09:45 – 11:15)

- Sample collection, preservation, and transport
- Quality control and standard operating procedures

Module 3: Laboratory Safety and Preparation (11:30 – 01:00)

- Lab safety protocols and best practices
- Equipment and materials preparation

Module 4: Workshop – Sample Handling (02:00 – 03:30)

- Hands-on sample collection and preparation
- Initial microbial observations

Day 2: Microbial Identification Techniques

Module 1: Microscopy and Staining (07:30 – 09:30)

- Gram staining, differential staining, and microscopy techniques

Module 2: Culture-Based Methods (09:45 – 11:15)

- Isolation and enumeration of bacteria
- Selective and differential media applications

Module 3: Enrichment and Identification (11:30 – 01:00)

- Enrichment techniques for low-abundance microorganisms
- Identifying pathogenic and indicator organisms

Module 4: Workshop – Identification Exercises (02:00 – 03:30)

- Hands-on culture preparation and identification
- Practical exercises in microbial enumeration

Day 3: Advanced Microbial Analysis

Module 1: Molecular Techniques (07:30 – 09:30)

- PCR, qPCR, and DNA-based microbial identification

Module 2: Viral and Protozoan Analysis (09:45 – 11:15)

- Detection methods for viruses and protozoa in wastewater

Module 3: Microbial Data Interpretation (11:30 – 01:00)

- Analyzing microbial counts and assessing wastewater quality

Module 4: Workshop – Molecular Analysis Exercises (02:00 – 03:30)

- Hands-on molecular techniques for microbial detection

Day 4: Regulatory Compliance and Reporting

Module 1: Environmental Standards and Guidelines (07:30 – 09:30)

- International and local wastewater regulations
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Compliance monitoring strategies

Module 2: Risk Assessment and Safety Management (09:45 – 11:15)

- Identifying hazards in microbial handling
- Safety protocols and mitigation strategies

Module 3: Data Recording and Reporting (11:30 – 01:00)

- Documentation of microbial results
- Preparing compliance reports

Module 4: Workshop – Reporting Practice (02:00 – 03:30)

- Hands-on exercises in data recording and regulatory reporting

Day 5: Advanced Applications and Case Studies

Module 1: Wastewater Treatment Microbiology (07:30 – 09:30)

- Microbial processes in activated sludge, biofilms, and anaerobic treatment

Module 2: Troubleshooting and Problem-Solving (09:45 – 11:15)

- Identifying operational issues and microbial causes

Module 3: Case Studies and Best Practices (11:30 – 01:00)

- Successful microbial monitoring programs
- Lessons learned and optimization strategies

Module 4: Workshop – Action Planning and Wrap-Up (02:00 – 03:30)

- Developing individual action plans for microbial monitoring
- Final Q&A and course feedback

Certification

Participants will receive a Certificate of Completion in Microbial Analysis of Wastewater – Master Class, validating their expertise in advanced microbial analysis techniques, wastewater quality assessment, and regulatory compliance.

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.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**