

## COMBUSTION CONTROL SYSTEM

*“Optimize Combustion Efficiency and Safety Through Advanced Control System Techniques.”*

### Schedule

Venue (In-house)	Fees
At Your Organization Premises	Ask For The Quotation

► **Available delivery methods:** In-House Training

### Introduction

Efficient and safe combustion is critical in power plants, industrial boilers, and process industries. Modern combustion systems rely on advanced control technologies to optimize fuel usage, reduce emissions, and ensure safe operation.

The Combustion Control System course provides participants with comprehensive knowledge of combustion principles, control strategies, and instrumentation. Through hands-on exercises and real-world case studies, participants will learn to design, implement, troubleshoot, and optimize combustion control systems, ensuring both safety and operational efficiency.

### Objectives

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

- Understand the fundamentals of combustion processes and system components.
- Design and implement advanced combustion control strategies.
- Monitor and optimize fuel-air ratios for efficiency and emissions reduction.
- Troubleshoot combustion control system faults and operational issues.
- Integrate instrumentation and control loops for stable combustion.
- Ensure compliance with safety regulations and emission standards.
- Apply best practices for boiler and furnace control system operations.
- Enhance overall plant safety, performance, and energy efficiency.

## Why Attend

This course is essential for engineers, operators, and technicians responsible for combustion systems in industrial and power generation facilities. Participants will gain practical skills in optimizing combustion processes, implementing control strategies, and troubleshooting complex systems, reducing downtime and operational risks.

## Target Audience

This course is suitable for:

- Combustion Engineers and Technicians
- Boiler and Furnace Operators
- Process and Plant Engineers
- Instrumentation and Control Engineers
- Maintenance Supervisors and Safety Officers
- Graduate Students in Mechanical, Electrical, or Process Engineering

## Individual Benefits

- Develop practical expertise in combustion control and optimization.
- Gain confidence in troubleshooting and maintaining combustion systems.
- Enhance understanding of fuel efficiency and emission control strategies.
- Improve problem-solving and analytical skills in industrial operations.
- Increase professional value and career advancement opportunities.
- Learn to implement safe, efficient, and sustainable combustion practices.

## Organizational Benefits

- Optimize fuel consumption and improve energy efficiency.
- Reduce downtime and operational risks in combustion systems.
- Ensure compliance with safety and environmental regulations.
- Enhance overall plant performance and reliability.
- Build internal expertise in combustion control and maintenance.
- Support sustainable and cost-effective operations.

## Instructional Methodology

The training employs a practical, hands-on approach through:

- Interactive lectures and system demonstrations
- Real-world combustion system case studies
- Step-by-step exercises on control loop tuning and optimization
- Group workshops and collaborative problem-solving sessions
- Assignments focused on troubleshooting and efficiency improvement
- Continuous feedback and Q&A sessions to reinforce learning

### Course Outline

- Module 1: Fundamentals of Combustion – Fuel, Air, and Combustion Principles
- Module 2: Combustion System Components – Burners, Boilers, and Furnaces
- Module 3: Control Loops and Feedback Systems for Combustion
- Module 4: Fuel-Air Ratio Optimization and Efficiency Techniques
- Module 5: Instrumentation and Sensors for Combustion Monitoring
- Module 6: Troubleshooting Combustion Control Systems
- Module 7: Safety Interlocks and Emergency Shutdown Procedures
- Module 8: Emission Control and Regulatory Compliance
- Module 9: Advanced Control Strategies – PID, PLC, and DCS Integration
- Module 10: Capstone Project – Optimizing Combustion for Efficiency and Safety

### Certification

Upon successful completion, participants will receive a Certificate in Combustion Control System, recognizing their expertise in efficient, safe, and optimized combustion control practices.

### 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**

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