MAWA EVENTS

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

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

PRACTICAL SAFETY INSTRUMENTATION AND EMERGENCY SHUTDOWN SYSTEMS

"Enhancing process safety through effective safety instrumentation and emergency shutdown practices"

Schedule

Date	Venue	Fees (Online)
05 – 06 May 2026	Online	USD 700 per delegate

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

Introduction

Safety Instrumented Systems (SIS) and Emergency Shutdown Systems (ESD) are critical layers of protection in high-risk industrial environments. Proper design, operation, and maintenance of these systems are essential to prevent major accidents and minimize the consequences of abnormal situations.

This 2-day intensive training provides practical knowledge of safety instrumentation, ESD systems, and their role in process safety. Participants will gain an understanding of system components, safety integrity levels (SIL), testing practices, and real-world applications to enhance operational safety and compliance.

Objectives

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

- Understand the purpose and function of SIS and ESD systems
- Identify key components of safety instrumentation
- Explain Safety Integrity Levels (SIL) and their application
- Recognize common failures and weaknesses in safety systems
- Apply best practices for testing and maintenance
- Improve coordination between operations, engineering, and safety teams
- Support compliance with process safety standards

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Why Attend

- Gain practical understanding of safety instrumentation and ESD systems
- Strengthen process safety and risk reduction capabilities
- Learn from real industrial examples and case studies
- Improve system reliability and operational safety
- Support compliance with international safety standards
- Ideal for engineers, technicians, and safety professionals

Target Audience

This program is designed for:

- Instrumentation and control engineers
- Electrical and automation engineers
- Operations and maintenance technicians
- Process and safety engineers
- HSE and process safety professionals
- Plant supervisors and reliability engineers

Individual Benefits

Key competencies that will be developed include:

- Improved understanding of SIS and ESD functionality
- Ability to identify safety instrumentation issues
- Enhanced troubleshooting and analytical skills
- Better understanding of SIL concepts and applications
- Increased confidence in safety system management
- Practical safety knowledge applicable to daily operations

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Enhanced protection against process incidents
- Improved reliability of safety systems
- Reduced operational and safety risks
- Stronger compliance with safety regulations
- Improved coordination between technical teams
- Strengthened overall process safety performance

Instructional Methodology

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

- Strategy Briefings – Fundamentals of safety instrumentation, SIS, and ESD systems
- Case Studies – Real-world incidents involving safety system failures
- Workshops – Practical exercises on system logic and safety functions
- Peer Exchange – Discussions on operational challenges and best practices
- Tools – SIS lifecycle diagrams, SIL calculation examples, and checklists

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Course Outline

Detailed 2-Day Course Outline

Training Hours: 9:00 AM – 3:30 PM Daily Format: 3–4 Learning Modules | Coffee breaks included

Day 1: Safety Instrumentation and SIS Fundamentals

Module 1: Introduction to Safety Instrumented Systems (09:00 – 10:30)

- Role of safety instrumentation in process safety
- Layers of Protection (LOPA) concept

Module 2: Components of SIS and ESD Systems (10:45 – 12:15)

- Sensors, logic solvers, and final elements
- ESD system architecture

Module 3: Safety Integrity Levels (SIL) (01:00 – 02:15)

- SIL definitions and requirements
- SIL determination basics

Module 4: Workshop – SIS Functional Overview (02:30 – 03:30)

- Practical examples of safety functions

Day 2: Testing, Maintenance, and Reliability

Module 1: SIS and ESD Testing Practices (09:00 – 10:30)

- Proof testing and functional testing
- Test intervals and documentation

Module 2: Common Failures and Human Factors (10:45 – 12:15)

- Design and operational weaknesses
- Human error considerations

Module 3: Maintenance and Change Management (01:00 – 02:15)

- Maintenance strategies
- Management of Change (MOC)

Module 4: Workshop – Improving Safety System Performance (02:30 – 03:30)

- Developing improvement actions

Certification

Participants will receive a Certificate of Completion in Practical Safety Instrumentation and Emergency Shutdown Systems, validating their knowledge and practical competence in managing safety instrumentation, SIS, and ESD systems in industrial operations.

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.

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