MAWA EVENTS

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

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

BASIC ELECTRICAL AND INSTRUMENTATION DESIGN

"Build a Strong Foundation in Electrical and Instrumentation Design for Safe and Efficient Systems."

Schedule

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

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

Introduction

Electrical and instrumentation design forms the backbone of industrial, commercial, and utility systems. A solid understanding of basic design principles ensures system reliability, safety, and compliance with standards.

The Basic Electrical and Instrumentation Design course introduces participants to fundamental concepts, design techniques, and best practices used in electrical and instrumentation engineering. Through practical examples, exercises, and case studies, participants will learn to design circuits, select instrumentation, and implement safety and control measures efficiently. This course is ideal for those new to the field or looking to refresh their foundational skills.

Objectives

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

- Understand basic electrical principles, components, and circuit design.
- Interpret and create electrical and instrumentation schematics and layouts.
- Select appropriate instruments and devices for measurement and control.
- Apply fundamental concepts of control systems and instrumentation.
- Ensure compliance with safety regulations and engineering standards.
- Perform basic calculations for load, voltage drop, and signal transmission.
- Develop an understanding of industrial process instrumentation and controls.

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Why Attend

This course is essential for engineers, technicians, and technical professionals entering the field of electrical and instrumentation design. Participants will gain practical knowledge to design basic systems, interpret drawings, and select instruments correctly. By strengthening foundational skills, attendees will be better prepared for advanced design challenges in industrial and utility systems.

Target Audience

This course is suitable for:

- Junior Electrical and Instrumentation Engineers
- Technicians and Maintenance Personnel
- Engineering Graduates and Students
- Control System and Instrumentation Specialists
- Project Engineers and Designers in Industrial Systems
- Anyone seeking a foundational understanding of electrical and instrumentation design

Individual Benefits

- Build strong foundational skills in electrical and instrumentation design.
- Gain confidence in reading and creating electrical and instrumentation drawings.
- Improve problem-solving and basic design capabilities.
- Increase employability and readiness for advanced design training.
- Develop practical understanding of instrumentation and control systems.

Organizational Benefits

- Equip staff with essential design knowledge for safe and efficient systems.
- Reduce design errors and enhance compliance with standards.
- Improve project execution efficiency and reduce rework.
- Build internal competency in electrical and instrumentation basics.
- Support safe and reliable operation of industrial systems.

Instructional Methodology

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

- Interactive lectures and guided discussions
- Real-world design case studies and examples
- Step-by-step exercises on circuit and instrumentation design
- Group workshops and collaborative problem-solving sessions
- Assignments to reinforce understanding of fundamental concepts
- Continuous feedback and Q&A sessions for skill improvement

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Course Outline

Module 1: Introduction to Electrical Systems – Basic Principles and Components

Module 2: Electrical Circuit Design and Load Calculations

Module 3: Electrical Drawings, Schematics, and Layouts

Module 4: Introduction to Instrumentation Systems and Devices

Module 5: Sensors, Transmitters, and Measurement Techniques

Module 6: Basics of Control Systems and Signal Processing

Module 7: Safety Practices and Regulatory Compliance

Module 8: Power Supply, Voltage Drop, and Wiring Calculations

Module 9: Practical Exercises – Circuit and Instrumentation Design

Module 10: Capstone Exercise – Basic Electrical and Instrumentation System Design

Certification

Upon successful completion, participants will receive a Certificate in Basic Electrical and Instrumentation Design, recognizing their proficiency in foundational electrical and instrumentation engineering concepts.

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**