MTBM


# EV HIGH-VOLTAGE SAFETY TRAINING

MTBM Group Sdn. Bhd. (1600656-M)

Level 8, MCT Tower, Sky Park, One City, Jalan USJ 25/1, 47650 Subang Jaya, Selangor

+603 8022 8330 +603 8022 8201 info@mtbmgroup.com mtbmgroup.com

**Course Title:** EV High-Voltage Safety Training

**Course Validity:** 2 Days

**Validity:** Not Applicable

**HRD Corp Scheme:** Claimable

## INTRODUCTION

This training provides essential knowledge and safety competencies for working with Electric Vehicles (EVs) that operate on high-voltage systems. Participants will learn how to identify high-voltage components, manage electrical hazards, follow lockout/tagout procedures, and safely conduct inspections or maintenance. The course emphasizes safety standards, emergency response, and regulatory requirements for handling EV high-voltage systems.

## OBJECTIVE(S):

- Understand high-voltage system architecture in EVs
- Identify high-voltage hazards and risk controls
- Learn safe handling procedures for HV components and cables
- Strengthen competency in insulation, isolation and lockout methods
- Understand regulatory and manufacturer-specific safety requirements
- Learn emergency response and incident management techniques
- Ensure safe maintenance and operational readiness when working with EV HV systems

**TARGET GROUP(S):**

- EV technicians and maintenance personnel
- Automotive engineers & workshop supervisors
- Electrical technicians & safety officers
- Fleet managers & EV service providers
- Organisations maintaining or operating electric vehicles

**ENTRY REQUIREMENT(S):**

- Able to read, write, and communicate in Malay/English

**TOPIC(S):**

1. Introduction to EV High-Voltage System Architecture
2. High-Voltage Components, Connectors and Safety Zones
3. Electrical Hazard Identification and Risk Controls
4. High-Voltage Isolation, Insulation and Lockout/Tagout Procedures
5. Personal Protective Equipment (PPE) and Safe Work Practices
6. Testing, Verification and High-Voltage Metering Tools
7. Emergency Response, Arc Flash Safety and Incident Handling
8. Regulatory, Compliance and Manufacturer Safety Requirements

**LIST OF REFERENCE BOOK(S):**

- EV High-Voltage Safety Standards (IEC/ISO)
- OEM EV Safety Manuals
- Electrical Safety Guidelines (ST & International)
- Arc Flash & Electrical PPE Manuals
- High-Voltage Maintenance & Inspection References

**LIST OF TEACHING AID(S):**

- LCD projector
- Computer
- Whiteboard with accessories

**METHODOLOGY(S):**

- Lecture
- Case studies
- Practical high-voltage safety demonstrations
- Group discussions
- Emergency response drills

**TRAINING SCHEDULE**

**Day 1**

| Time | Activity / Topic |
|---|---|
| 8:30 am – 9:00 am | Registration and Introduction |
| 9:00 am – 9:45 am | Topic 1: Introduction to EV High-Voltage Architecture |
| 9:45 am – 10:30 am | Topic 2: High-Voltage Components & Safety Zones |
| 10:30 am – 10:45 am | **Morning Tea Break** |
| 10:45 am – 11:30 am | Topic 3: Electrical Hazard Identification & Risk Controls |
| 11:30 am – 12:30 pm | Topic 4: Isolation & Lockout/Tagout Procedures |
| 12:30 pm – 1:30 pm | **Lunch Break** |
| 1:30 pm – 2:30 pm | Practical: HV Component Identification |
| 2:30 pm – 3:30 pm | Case Study: HV Accident Analysis |
| 3:30 pm – 3:45 pm | **Afternoon Tea Break** |
| 3:45 pm – 5:00 pm | Workshop: Performing HV Isolation Safely |

**TRAINING SCHEDULE**

**Day 2**

| Time | Activity / Topic |
|---|---|
| 8:30 am – 9:00 am | Recap of Day 1 & Q&A |
| 9:00 am – 9:45 am | Topic 5: PPE & Safe Work Practices |
| 9:45 am – 10:30 am | Topic 6: Testing, Verification & Metering Tools |
| 10:30 am – 10:45 am | **Morning Tea Break** |
| 10:45 am – 11:30 am | Topic 7: Emergency Response & Incident Handling |
| 11:30 am – 12:30 pm | Practical: Arc Flash & HV Response Simulation |
| 12:30 pm – 1:30 pm | **Lunch Break** |
| 1:30 pm – 2:30 pm | Topic 8: Regulatory & Compliance Requirements |
| 2:30 pm – 3:30 pm | High-Voltage Safety Audit & Compliance Checklist |
| 3:30 pm – 3:45 pm | **Afternoon Tea Break** |
| 3:45 pm – 5:00 pm | Final Review, Q&A & Closing |