MTBM

BATTERY MANAGEMENT SYSTEM (BMS) AWARENESS TRAINING

MTBM Group Sdn. Bhd. (1600656-M)

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Course Title: Battery Management System (BMS) Awareness Training

Course Validity: 1 Day

Validity: Not Applicable

HRD Corp Scheme: Claimable

INTRODUCTION:

This training provides participants with essential understanding of Battery Management Systems (BMS) used in electric vehicles, energy storage systems and other high-voltage applications. It explains BMS functions, architecture, monitoring capabilities, protection features and communication interfaces. Participants will learn how BMS ensures battery safety, performance, longevity and reliability, including basic diagnostics, fault indications and safe handling of battery systems.

OBJECTIVE(S):

- Understand the purpose, functions and components of a Battery Management System
- Learn key safety, protection and monitoring features in modern BMS designs
- Strengthen awareness of cell balancing, SOC/SOH estimation and thermal control
- Improve understanding of BMS communication, sensors and data interpretation
- Recognise common BMS faults, alarms and troubleshooting indicators
- Support safe operation, handling and maintenance of battery systems
- Enhance awareness of risks associated with lithium-ion technologies
- Build foundational readiness for EV and ESS battery safety practices

TARGET GROUP(S):

- EV technicians, maintenance teams & engineers
- Battery system operators, installers & support staff
- Safety officers, facility managers & technical personnel
- Organisations working with EVs, ESS or lithium-ion systems

ENTRY REQUIREMENT(S):

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

TOPIC(S):

1. Introduction to Battery Management Systems (BMS)
2. BMS Architecture, Components & Functional Overview
3. Battery Chemistry, Cells & Pack Configuration Basics
4. BMS Monitoring, Protection & Control Features
5. SOC, SOH, Cell Balancing & Thermal Management
6. Sensors, Communication Protocols & Data Acquisition
7. Common BMS Faults, Warnings & Diagnostic Indicators
8. Safe Handling & Best Practices for Battery Systems

LIST OF REFERENCE BOOK(S):

- Battery Management System Technical Guidelines
- EV & ESS Battery Safety Standards
- Lithium-ion Battery Operation & Handling References
- BMS Diagnostics & Monitoring Manuals

LIST OF TEACHING AID(S):

- LCD projector
- Computer
- Whiteboard with accessories

METHODOLOGY(S):

- Lecture
- Case studies
- Group discussions
- BMS data interpretation exercises
- Practical awareness workshops

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 BMS & Key Functions
9:45 am – 10:30 am	Topic 2: BMS Architecture & Components
10:30 am – 10:45 am	**Morning Tea Break**
10:45 am – 11:30 am	Topic 3: Battery Chemistry, Cells & Pack Structure
11:30 am – 12:30 pm	Topic 4: BMS Monitoring, Protection & Control
12:30 pm – 1:30 pm	**Lunch Break**
1:30 pm – 2:30 pm	Topic 5: SOC/SOH, Balancing & Thermal Management
2:30 pm – 3:30 pm	Topic 6: Communication, Sensors & Data Interpretation
3:30 pm – 3:45 pm	Afternoon Tea Break
3:45 pm – 5:00 pm	Topic 7 & 8: BMS Faults, Warnings & Safe Handling / Final Review