Battery Safety and Risk Management Training Course

Professional Development Training Course Outline

Category	Renewable Energy	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

The rapid growth of lithium-ion battery technology, energy storage systems (ESS), and electric vehicles (EVs) has transformed global industries, but it has also introduced critical safety challenges. From thermal runaway incidents to battery fire hazards, organizations must adopt robust battery safety protocols, risk assessment frameworks, and compliance standards to protect people, assets, and the environment. Battery Safety and Risk Management Training Course provides a comprehensive foundation in battery hazard identification, risk mitigation strategies, and emergency response planning, aligned with international standards and industry best practices.

Designed for professionals across sectors, this training equips participants with practical knowledge on battery lifecycle management, safety engineering, and incident prevention techniques. Through real-world case studies, interactive modules, and hands-on exercises, learners will gain the skills to manage risks associated with energy storage systems, ensure workplace safety compliance, and implement sustainable battery management solutions in high-risk environments.

Programme Curriculum

Battery Safety and Risk Management Training Course

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Course Objectives

1. Understand battery chemistry risks and thermal runaway prevention
2. Identify battery hazards in EVs and energy storage systems
3. Apply risk assessment methodologies for battery systems
4. Implement battery fire safety protocols and suppression techniques
5. Analyze real-world battery failure case studies
6. Ensure compliance with ISO, IEC, and NFPA battery safety standards
7. Develop battery risk management plans
8. Improve incident investigation and root cause analysis
9. Enhance workplace safety culture for battery operations
10. Utilize predictive maintenance and monitoring technologies
11. Manage battery storage, transport, and disposal risks
12. Strengthen emergency response and crisis management
13. Integrate sustainability and ESG practices in battery management

Target Audience

1. Safety Officers and **HSE Professionals**
2. Engineers in **Energy Storage and EV Industries**
3. Facility and Operations Managers
4. Fire Safety and Emergency Response Teams
5. Battery Manufacturers and Technicians
6. Risk Management and Compliance Officers
7. Renewable Energy Project Managers
8. Government and Regulatory Personnel

Training Modules

Module 1: Fundamentals of Battery Technology

- Types of batteries
- Battery components and design
- Energy density and performance factors
- Charging and discharging cycles
- **Case Study:** EV battery failure analysis

Module 2: Battery Hazards and Risks

- Chemical and electrical hazards

- Fire and explosion risks
- Toxic gas emissions
- Short circuits and overcharging
- **Case Study:** Warehouse battery fire incident

Module 3: Thermal Runaway Mechanisms

- Causes of thermal runaway
- Propagation risks
- Early warning signs
- Prevention techniques
- **Case Study:** Tesla battery fire analysis

Module 4: Battery Safety Standards & Regulations

- ISO and IEC standards
- NFPA guidelines
- Local regulatory compliance
- Safety certifications
- **Case Study:** Compliance failure consequences

Module 5: Risk Assessment Techniques

- Hazard identification (HAZID)
- Risk analysis (HIRA)
- Failure Mode and Effects Analysis (FMEA)
- Risk matrix application
- **Case Study:** Industrial risk assessment

Module 6: Fire Prevention and Protection

- Fire detection systems
- Suppression technologies
- Fire-resistant materials
- Emergency shutdown systems
- **Case Study:** ESS fire suppression success

Module 7: Battery Storage and Handling

- Safe storage practices
- Temperature control
- Handling procedures
- Packaging standards
- **Case Study:** Logistics incident review

Module 8: Transportation Safety

- UN transport regulations
- Packaging and labeling
- Shipping risks
- Incident reporting
- **Case Study:** ???? battery transport accident

Training Methodology

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

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