Integrated Laboratory Safety and Environmental Quality Training Course

21 - 25 Dec 2026

Boston

7500 € (Per Person)

Ref: #ENV8239_101994

Course Introduction / Overview:

This comprehensive training course is designed to provide a deep and integrated understanding of laboratory safety and environmental quality assurance. In today's highly regulated and competitive landscape, the ability to maintain a safe working environment while ensuring the highest standards of environmental quality is not just a legal requirement but a cornerstone of operational excellence and corporate responsibility. This program moves beyond basic compliance, focusing on creating a proactive culture of safety and environmental stewardship. Participants will explore the intricate relationship between hazard identification, risk assessment, and the implementation of robust quality management systems (QMS). Drawing upon principles outlined by experts like James A. Kaufman, a pioneer in laboratory safety education, and concepts from essential texts such as "Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards," this course provides a holistic framework. BIG BEN Training Center has developed this curriculum to empower professionals with the skills to design, implement, and manage effective safety and environmental protocols, thereby minimizing risks, ensuring regulatory compliance, and enhancing the overall integrity and efficiency of laboratory operations. This is a critical skill set for any organization committed to sustainable and responsible scientific practice.

Target Audience / This training course is suitable for:

- Laboratory Managers and Supervisors.
- Quality Assurance and Quality Control Professionals.
- Environmental, Health, and Safety (EHS) Officers.
- Research Scientists and Associates.
- Laboratory Technicians and Technologists.
- Compliance and Regulatory Affairs Specialists.
- Facility and Operations Managers.
- Chemical Hygiene Officers.
- Anyone responsible for laboratory safety and environmental performance.

Target Sectors and Industries:

- Pharmaceutical and Biotechnology Industries.
- Chemical Manufacturing and Processing.
- Environmental Testing and Consulting Services.
- Healthcare, Clinical, and Diagnostic Laboratories.
- Food and Beverage Quality Control Labs.
- Academic and Government Research Institutions.
- Oil and Gas Sector Laboratories.
- Water and Wastewater Treatment Facilities.
- Governmental and regulatory bodies.

Target Organizations Departments:

- Research and Development (R&D).
- Quality Assurance (QA) and Quality Control (QC).
- Environmental, Health, and Safety (EHS).
- Laboratory Operations and Management.
- Regulatory Affairs and Compliance.
- Manufacturing and Production.
- Facilities Management.
- Product Development.

Course Offerings:

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

- Develop and implement a comprehensive Chemical Hygiene Plan in line with regulatory standards.
- Conduct thorough risk assessments for chemical, biological, and physical hazards in the laboratory.
- Master the principles of safe chemical handling, storage, and waste disposal.
- Establish robust emergency preparedness and response procedures for laboratory incidents.
- Integrate environmental quality assurance principles into daily laboratory operations.
- Ensure compliance with key regulations from bodies such as OSHA and the EPA.
- Implement elements of Good Laboratory Practice (GLP) and ISO 17025.
- Design and conduct effective internal safety and environmental audits.
- Foster a proactive culture of safety and continuous improvement within their teams.

Course Methodology:

The training methodology at BIG BEN Training Center is designed to be highly interactive, engaging, and practical, ensuring that participants can immediately apply their learning in a real-world context. This course moves beyond traditional lectures by incorporating a dynamic blend of training techniques. We utilize detailed case studies of actual laboratory incidents to analyze root causes and develop preventative strategies. Interactive group workshops and brainstorming sessions will challenge participants to collaboratively solve complex safety and environmental challenges. Practical exercises, such as developing a risk assessment for a simulated procedure or designing a hazardous waste management plan, provide hands-on experience. The course also features expert-led discussions, Q&A sessions, and peer-to-peer knowledge sharing to foster a rich learning environment. Our experienced instructors act as facilitators, guiding participants through the material and providing personalized feedback. The focus is on building practical skills and critical thinking abilities, empowering attendees to return to their organizations as confident and competent leaders in laboratory safety and environmental quality.

Course Agenda (Course Units):

Unit One Foundations of Laboratory Safety and Regulatory Frameworks

- Introduction to laboratory safety culture and its importance.
- Overview of key international and national safety regulations (e.g., OSHA, EPA).
- Understanding roles and responsibilities for safety and environmental compliance.
- Principles of hazard recognition, identification, and communication.
- Introduction to the Globally Harmonized System (GHS) of Classification and Labelling.
- Reading and interpreting Safety Data Sheets (SDS).
- Fundamentals of a comprehensive Chemical Hygiene Plan (CHP).

Unit Two Chemical and Physical Hazard Management

- Safe practices for handling and storing hazardous chemicals.
- Procedures for managing flammable, corrosive, reactive, and toxic substances.
- Understanding and controlling physical hazards like electrical, pressure, and ergonomic risks.
- Selection, use, and maintenance of Personal Protective Equipment (PPE).
- Proper operation and maintenance of safety equipment like fume hoods and eyewash stations.
- Best practices for compressed gas cylinder safety.
- Introduction to radiation safety principles in the laboratory.

Unit Three Biological Hazards and Risk Assessment

- Introduction to biosafety principles and Biosafety Levels (BSL).
- Risk assessment and management for biological agents.
- Standard microbiological practices and containment procedures.
- Decontamination, disinfection, and sterilization techniques.
- Management of biological and infectious waste.
- Conducting a formal laboratory risk assessment from start to finish.
- Developing Standard Operating Procedures (SOPs) for high-risk tasks.

Unit Four Environmental Quality Assurance and Waste Management

- Principles of environmental stewardship in a laboratory setting.
- Characterization and segregation of hazardous laboratory waste streams.
- Regulatory requirements for hazardous waste accumulation, storage, and disposal.
- Implementing pollution prevention and waste minimization strategies.
- Techniques for environmental monitoring of air and water quality.
- Spill prevention, control, and countermeasure (SPCC) planning.
- Documentation and record-keeping for environmental compliance.

Unit Five Integrated Management Systems, Audits, and Continuous Improvement

- Introduction to Quality Management Systems (QMS) like ISO 17025 and GLP.
- Integrating safety and environmental protocols into a unified management system.
- Techniques for conducting effective internal safety and environmental audits.
- Incident investigation, root cause analysis, and corrective action planning.
- Developing and delivering effective safety training for laboratory personnel.
- Metrics and Key Performance Indicators (KPIs) for safety and environmental performance.
- Strategies for fostering a culture of continuous improvement and proactive safety.

FAQ:

Qualifications required for registering to this course?

There are no requirements.

How long is each daily session, and what is the total number of training hours for the course?

This training course spans five days, with daily sessions ranging between 4 to 5 hours, including breaks and interactive activities, bringing the total duration to 20 - 25 training hours.

Something to think about:

How can an organization effectively measure the return on investment (ROI) of a robust safety and environmental quality program, moving beyond simple compliance metrics to quantify its impact on innovation, efficiency, and employee morale?

What unique qualities does this course offer compared to other courses?

This course distinguishes itself by offering a uniquely integrated approach that holistically combines laboratory safety with environmental quality assurance, rather than treating them as separate disciplines. While many courses focus solely on regulatory compliance and hazard checklists, this program delves deeper into the strategic implementation of a proactive culture. We emphasize the synergy between safety protocols and environmental stewardship, demonstrating how robust systems in one area reinforce excellence in the other. The curriculum is built around real-world case studies and practical, hands-on workshops that challenge participants to solve complex problems, moving far beyond theoretical knowledge. It focuses on developing leadership skills needed to champion these initiatives, conduct effective internal audits, and drive continuous improvement. Furthermore, the course content is designed to align with internationally recognized management systems like ISO 17025 and Good Laboratory Practice (GLP), providing a framework that is not only compliant but also enhances operational efficiency, data integrity, and the overall scientific credibility of the organization. The ultimate goal is to empower participants to become agents of change, capable of building resilient, responsible, and high-performing laboratory environments.