MERCURY

Exposure Assessment for Critical Health Hazards Professional Program

16 – 27 August 2027
Geneva (Switzerland)



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Exposure Assessment for Critical Health Hazards Professional Program

Ref: 121647_1084152 **Date:** 16 – 27 August 2027 **Location:** Geneva (Switzerland) **Fees:** 11000 Euro

Introduction

Exposure assessment is a core discipline in occupational health because it helps organizations understand how workers encounter chemical, physical, biological, ergonomic, and psychosocial hazards in real working conditions. This Exposure Assessment for Critical Health Hazards Professional program builds a foundation for identifying hazards, evaluating exposure pathways, and interpreting exposure data with professional accuracy. Participants learn how to connect workplace observations, monitoring results, and risk indicators to make informed decisions about worker protection. The course explains how exposure assessment supports preventive action, compliance, and long-term occupational health management. It improves exposure monitoring strategies, health risk assessment, and exposure control programs that reduce harm at the source. Participants will approach occupational exposure assessment with a practical, standards-based, and risk-oriented mindset.

Targeted Groups

This Exposure Assessment for Critical Health Hazards Professional program targets professionals seeking knowledge and skills:

- Occupational health and safety specialists.
- Industrial hygienists and exposure assessors.
- Safety managers and EHS practitioners.
- Risk assessment and compliance professionals.
- Workplace health and hygiene coordinators.
- HSE consultants and auditors.
- Supervisors in high-hazard operations.
- Professionals involved in health hazard assessment.

Course Objectives

Participants will achieve the following objectives by completing the Exposure Assessment for Critical Health Hazards Professional course:

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- Explain the principles of occupational exposure assessment and its role in preventive health protection.
- Identify chemical, biological, physical, ergonomic, and psychosocial hazards in workplace settings.
- Recognize exposure routes, worker profiles, and high-risk exposure scenarios.
- Apply chemical exposure assessment methods to airborne contaminants and toxic substances.
- Interpret physical hazard exposure issues related to noise, heat stress, vibration, and radiation.
- Understand the concepts of biological exposure assessment and occupational health surveillance.
- Evaluate exposure data, detect trends, and recognize meaningful exposure patterns.
- Prioritize health risks and support exposure control decisions using structured methods.
- Relate exposure assessment practices to ISO 45001, ACGIH guidance, and AIHA strategies.

Targeted Competencies

Participants will gain the following competencies during the Exposure Assessment for Critical Health Hazards Professional program:

- Hazard recognition and exposure pathway analysis.
- Exposure profiling for workers and tasks.
- Exposure monitoring interpretation and evaluation.
- Risk characterization and prioritization skills.
- Application of control measures across occupational hazards.
- Documentation and reporting of exposure assessment findings.
- Alignment with occupational health management systems and professional best practices.

Studying Scenarios

In this Exposure Assessment for Critical Health Hazards Professional training, participants develop skills through the following scenarios:

- A chemical plant faces concerns about exposure to airborne pollutants.
- The manufacturing site is subject to noise, vibration, and thermal stress hazards.
- The healthcare facility faces challenges related to exposure to biological agents.
- A multi-worker environment requires classifying exposure levels and developing control plans.

Course Content

Unit 1: Principles of Occupational Exposure Assessment

- Exposure Assessment Fundamentals.
- Occupational Health Hazard Categories.
- Hazard Recognition Techniques.
- Exposure Assessment Frameworks.

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Unit 2: Health Hazard Identification

- Chemical Hazards.
- Biological Hazards.
- Physical Hazards.
- Ergonomic Hazards.
- Psychosocial Hazards.

Unit 3: Exposure Pathways and Worker Risk Profiles

- Routes of Exposure.
- Worker Exposure Profiles.
- Exposure Scenarios.
- High-Risk Activities.

Unit 4: Chemical Exposure Assessment Methodologies

- Airborne Contaminants.
- Toxic Substance Evaluation.
- Exposure Monitoring Strategies.
- Exposure Limit Applications.

Unit 5: Physical Hazard Exposure Assessment

- Occupational Noise.
- Heat Stress.
- Vibration.
- Radiation Hazards.
- Environmental Factors.

Unit 6: Biological Exposure Assessment

- Biological Agents.
- Infectious Disease Risks.
- Biological Monitoring Concepts.
- Occupational Health Surveillance.

Unit 7: Exposure Data Evaluation and Interpretation

- Exposure Data Analysis.
- Exposure Variability.
- Trend Identification.
- Exposure Pattern Recognition.

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Unit 8: Health Risk Assessment and Prioritization

- Risk Characterization.
- Probability and Severity Assessment.
- Risk Matrix Applications.
- Exposure Ranking Systems.

Unit 9: Exposure Control Programs

- Hierarchy of Controls.
- Engineering Control Systems.
- Administrative Controls.
- PPE Programs.
- Exposure Reduction Strategies.

Unit 10: International Standards and Best Practices

- ISO 45001 Requirements.
- ACGIH Guidelines.
- AIHA Exposure Assessment Strategies.
- Occupational Health Management Systems.
- Exposure Assessment Reporting and Documentation.

Final Insights & Key Takeaways

Exposure assessment for critical health hazards strengthens workplace prevention by turning hazard recognition and monitoring data into practical control decisions. A disciplined approach to exposure assessment, exposure limits, and health risk prioritization supports safer operations, better compliance, and stronger occupational health performance.