Biosafety in Biochemical Industries Training Course

Professional Development Training Course Outline

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

Course Introduction

Biosafety in Biochemical Industries Training Course is designed to equip professionals with cutting-edge competencies in biosafety management, biohazard control, industrial biotechnology safety, and biochemical risk mitigation. As global industries increasingly adopt advanced bioprocessing, genetic engineering, pharmaceutical manufacturing, and industrial microbiology, the need for robust biosafety frameworks, contamination control strategies, and regulatory compliance systems has become critical. This training integrates internationally recognized standards such as WHO Biosafety Guidelines, ISO 35001 Biological Risk Management, OSHA Laboratory Safety Standards, GMP (Good Manufacturing Practices), and GLP (Good Laboratory Practices) to ensure participants develop world-class safety expertise.

In modern biochemical industries, the convergence of biological agents, hazardous chemicals, and high-throughput industrial processes demands a proactive safety culture rooted in risk assessment, containment engineering, personal protective equipment (PPE), and emergency preparedness systems. This course emphasizes real-world applications across pharmaceutical plants, biotech manufacturing units, diagnostic laboratories, and fermentation industries. Participants will gain practical insights into biosecurity protocols, waste decontamination systems, incident reporting frameworks, and laboratory containment levels, enabling them to minimize occupational risks while ensuring product integrity and environmental protection.

Programme Curriculum

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5 days

Course Objectives

1. Master biosafety risk assessment & hazard identification in biotech industries
2. Understand BSL-1 to BSL-4 containment systems & engineering controls
3. Apply WHO biosafety guidelines & ISO 35001 compliance frameworks
4. Implement biohazard waste management & sustainable disposal systems
5. Develop expertise in PPE selection, usage & contamination prevention
6. Strengthen knowledge of industrial microbiology safety protocols
7. Conduct incident reporting, root cause analysis & corrective actions (CAPA)
8. Ensure GMP & GLP compliance in biochemical production environments
9. Apply emergency response planning for bio-spill & chemical exposure
10. Enhance skills in biosecurity & pathogen containment strategies
11. Learn laboratory design principles for safe biochemical workflows
12. Integrate decontamination, sterilization & disinfection technologies
13. Promote a zero-harm safety culture in biotech & pharmaceutical industries

Target Audience

1. Biochemical & Biotechnology Engineers
2. Pharmaceutical Manufacturing Professionals
3. Laboratory Technicians & Microbiologists
4. Quality Assurance & Quality Control Officers
5. Environmental Health & Safety (EHS) Managers
6. Biomedical Researchers & Scientists
7. Industrial Hygiene & Safety Consultants
8. Graduate Students in Life Sciences & Bioprocess Engineering

Course Modules

Module 1: Fundamentals of Biosafety in Biochemical Industries

- Principles of biosafety and biosecurity frameworks
- Classification of biological hazards and risk levels

- Introduction to biosafety levels
- Regulatory overview
- Case Study: Containment failure analysis in a biotech fermentation lab

Module 2: Risk Assessment & Hazard Identification

- Biological hazard identification techniques
- Risk matrix development and mitigation planning
- Exposure pathways in industrial labs
- Quantitative and qualitative risk analysis
- Case Study: Risk assessment breakdown in pharmaceutical R&D facility

Module 3: Containment Systems & Engineering Controls

- Primary and secondary containment strategies
- HEPA filtration and air handling systems
- Biosafety cabinets
- Facility design for contamination control
- Case Study: Air contamination incident in vaccine production unit

Module 4: Personal Protective Equipment (PPE) & Human Safety

- PPE selection for biochemical exposure risks
- Respiratory protection and chemical shielding
- Donning and doffing procedures
- PPE compliance monitoring systems
- Case Study: PPE failure leading to microbial exposure incident

Module 5: Biohazard Waste Management & Decontamination

- Segregation of biological waste streams
- Autoclaving, incineration & chemical disinfection
- Environmental sustainability in waste disposal
- Sterilization validation protocols
- Case Study: Improper waste disposal in diagnostic laboratory

Module 6: Emergency Response & Incident Management

- Bio-spill response procedures
- Chemical-biological exposure control
- Emergency evacuation planning
- Incident reporting and CAPA systems
- Case Study: Spill response failure in biotech manufacturing plant

Module 7: Regulatory Compliance & Quality Systems

- GMP, GLP & ISO 35001 implementation
- Audit readiness and inspection protocols
- Documentation and SOP management
- Compliance monitoring systems
- Case Study: Regulatory non-compliance in pharmaceutical inspection

Module 8: Biosecurity & Industrial Laboratory Safety Culture

- Pathogen containment and access control systems
- Cyber-biosecurity integration in biotech systems
- Safety culture development strategies
- Behavioral safety in laboratories
- Case Study: Biosecurity breach in research laboratory environment

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- 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
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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Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com