Chemical, Biological, Radiological, and Nuclear (CBRN) Defense Training Course

Professional Development Training Course Outline

Category	Defense and Security	**Duration**	10 Days
Base Fee	$3,000 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Chemical, biological, radiological, and nuclear (CBRN) threats continue to evolve as geopolitical tensions, technological advancements, and global vulnerabilities increase. Governments, security agencies, emergency responders, and defense institutions must therefore strengthen their readiness through robust CBRN detection, identification, mitigation, and response frameworks. Chemical, Biological, Radiological, and Nuclear (CBRN) Defense Training Course offers a comprehensive examination of CBRN hazards, protective technologies, operational tactics, emergency coordination, and international regulatory standards, equipping professionals with advanced knowledge to combat emerging asymmetric threats effectively.

Participants will gain practical expertise in hazard recognition, decontamination procedures, incident command, medical countermeasures, and risk communication. With a strong focus on operational preparedness and security resilience, the course blends theory with hands-on scenario-based learning to enhance real-world decision-making. Learners will explore tools used in CBRN surveillance, protective gear operations, forensic sampling, and inter-agency coordination, ensuring they are capable of managing high-risk incidents and safeguarding national security and public health systems.

Programme Curriculum

Chemical, Biological, Radiological, and Nuclear (CBRN) Defense Training Course

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Course Objectives

1. Understand foundational principles and evolving trends in CBRN threats and defense.
2. Identify chemical, biological, radiological, and nuclear agents through modern detection technologies.
3. Apply global CBRN defense standards and regulatory frameworks in operational planning.
4. Strengthen risk assessment capabilities for high-threat environments and critical infrastructure.
5. Develop effective response plans aligned with incident command systems.
6. Operate personal protective equipment (PPE) and specialized CBRN protective systems.
7. Implement decontamination procedures for personnel, equipment, and environments.
8. Coordinate multi-agency emergency response operations during CBRN incidents.
9. Apply medical countermeasures and triage techniques for CBRN casualty management.
10. Conduct forensic sampling, preservation, and evidence handling in contaminated areas.
11. Utilize real-time CBRN surveillance, monitoring, and threat intelligence platforms.
12. Strengthen crisis communication and public information management during emergencies.
13. Build institutional resilience through continuous training, preparedness exercises, and technology adoption.

Organizational Benefits

- Enhanced institutional readiness for complex CBRN emergencies
- Improved coordination among defense, health, and emergency response teams
- Reduced risk of large-scale casualties through faster detection and response
- Strengthened compliance with international CBRN safety regulations
- Increased staff competency in hazard mitigation and protective operations
- Improved infrastructure security through risk-informed planning
- Better crisis communication and public safety management
- Effective resource allocation for response and recovery operations
- Enhanced national security and resilience against asymmetric threats
- Strengthened reputation and capacity as a CBRN-prepared organization

Target Audiences

- Military personnel and defense planners
- Emergency responders and civil protection agencies
- Public health and medical emergency teams
- Law enforcement and anti-terror units
- Disaster management and crisis coordination professionals
- Security analysts and risk management officers
- Environmental and hazardous materials response teams

- Government officials and regulatory bodies

Course Duration: 10 days

Course Modules

Module 1: Introduction to CBRN Threats and Defense

- Overview of CBRN hazards and global threat landscape
- Categories and characteristics of CBRN agents
- Importance of preparedness and integrated defense systems
- Operational roles of national and international agencies
- Key technological advancements in CBRN defense
- Case Study: Analysis of a major international CBRN incident

Module 2: Chemical Agents and Hazard Identification

- Types of chemical agents and their effects
- Detection technologies for chemical threats
- Exposure pathways and protective measures
- Chemical hazard risk assessment techniques
- Safe handling and containment procedures
- Case Study: Chemical release in an urban environment

Module 3: Biological Threats and Disease Agents

- Classification of biological warfare and infectious agents
- Early warning and biosurveillance systems
- Field identification and sampling protocols
- Biosecurity measures for laboratories and responders
- Strategies for outbreak containment
- Case Study: Biological incident affecting civilian populations

Module 4: Radiological Threats and Emergency Response

- Radiological materials and modes of exposure
- Detection and monitoring equipment
- Shielding, evacuation, and radiation dose management
- Radiological dispersal device (RDD) response planning
- Radiological contamination control procedures
- Case Study: Response to a radiological contamination event

Module 5: Nuclear Threats and High-Impact Scenarios

- Understanding nuclear detonations and fallout
- Hazards associated with nuclear materials
- Strategic response frameworks for large-scale incidents
- Emergency sheltering and safety protocols
- Long-term recovery considerations
- Case Study: Nuclear facility emergency scenario

Module 6: CBRN Protective Equipment Operations

- Types and levels of personal protective equipment
- Donning and doffing procedures for responder safety
- Respiratory protection and filtration systems
- Equipment maintenance and inspection routines
- Limitations of protective gear
- Case Study: PPE failures during a live training exercise

Module 7: Decontamination Techniques and Procedures

- Principles of effective decontamination
- Personnel, equipment, and environmental decontamination
- Decontamination site setup and management
- Chemical-neutralizing agents and technologies
- Safety considerations during decontamination
- Case Study: Large-scale decontamination after an industrial spill

Module 8: Incident Command and Emergency Coordination

- Structure of incident command systems
- Inter-agency coordination and communication
- Roles and responsibilities during CBRN incidents
- Resource management and logistics
- Decision-making in high-pressure environments
- Case Study: Coordinated response to a multi-agency CBRN emergency

Module 9: Medical Response to CBRN Casualties

- Triage and clinical management of exposed individuals
- Medical countermeasures for CBRN agents
- Treatment protocols for chemical and biological exposure
- Radiological and nuclear casualty management
- Medical evacuation procedures
- Case Study: Field hospital response to mass casualties

Module 10: CBRN Detection Technologies and Surveillance

- Types of detection systems and sensors
- Real-time monitoring technologies
- Environmental sampling and laboratory analysis
- Intelligence-driven surveillance strategies
- Integrating detection systems with command centers
- Case Study: Early detection of a cross-border CBRN threat

Module 11: Hazardous Materials Handling and Transport Safety

- Classification of hazardous materials
- Regulations governing hazmat transport
- Safe packaging, storage, and movement protocols
- Emergency procedures for transportation incidents
- Reporting and documentation requirements
- Case Study: Hazmat spill during road transport

Module 12: Public Communication and Crisis Information Management

- Crisis communication frameworks
- Managing misinformation during CBRN emergencies
- Communicating risks to affected populations
- Media coordination and briefing processes
- Building public trust through transparent communication
- Case Study: Public communication strategy during a CBRN outbreak

Module 13: Forensic Sampling and Evidence Management

- Techniques for collecting contaminated evidence
- Chain-of-custody protocols
- Tools and equipment for forensic operations
- Integration of forensic data in intelligence processes
- Safety risks during forensic sampling
- Case Study: Forensic investigation in a contaminated scene

Module 14: International Standards and Regulatory Compliance

- International CBRN safety guidelines and conventions
- National compliance frameworks
- Reporting obligations and regulatory oversight
- Inspection processes and auditing requirements
- Harmonizing institutional policies with global standards
- Case Study: Compliance assessment of a national CBRN program

Module 15: Building Institutional CBRN Preparedness and Resilience

- Training and capacity-building strategies
- Developing institutional CBRN policies and SOPs
- Investment in technology and infrastructure
- Conducting simulations and preparedness exercises
- Strengthening long-term resilience plans
- Case Study: Designing a national CBRN preparedness framework

Training Methodology

- Instructor-led presentations and expert briefings
- Scenario-based group exercises and simulations
- Case study analysis for applied learning
- Practical demonstrations of CBRN equipment and tools
- Role-playing for command and response coordination
- Development of action plans for institutional implementation

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	04 Dec 2026	Online	$2,000
23 Nov 2026	04 Dec 2026	Physical	$3,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$6,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$9,000
23 Nov 2026	04 Dec 2026	Physical	$12,000
23 Nov 2026	04 Dec 2026	Physical	$12,000

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