

# Course: Considerations for Training in Biorisk Management

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## *Design Document*



## Part I: Course Overview

### Course Description

#### Overview

*Considerations for Training in Biorisk Management* is designed for managers who oversee staff and programs where providing knowledge, skills, and abilities relevant to biorisk management through training is critical. Through guided discussion and interactive exercises, managers will determine needed training content and also identify qualifications for instructors who can deliver the content in a sustainable manner. The course also emphasizes the need for managers to be involved in the instructional design process – in particular in the identification of learning objectives and the evaluation of the training.

#### Scope

This course is a management level course intended to increase the awareness and skills necessary to plan, prioritize, and assign appropriate people, resources, and time towards training in biorisk management. This course is not designed to instruct on training techniques.

#### Learning Level based on Bloom's taxonomy

- ✓ knowledge
- ✓ comprehension
- ✓ application
- synthesis
- evaluation

#### Length of Course

4 hours

### Course Objectives


At the end of this Course, Students will be able to:

#### Organizational Objectives

- Understand and explain why training is important
- Review Biorisk Management Principles and use it as a foundation for determining what types of training is necessary
- To enhance effectiveness and sustainability of Biorisk Management Training by using “brain-friendly” training techniques

#### Instructional Objectives

- Introduce and define key words and concepts that apply to Biorisk Management Principles, instructional design and training techniques
- Explain what impacts or influence Biorisk Management within a facility and why training is needed
- Demonstrate the effectiveness of training techniques and environment
- Understand the roles and responsibilities of policymakers, top management, biorisk managers, laboratory director and workers



## *Personal Objectives*

- |      |   |
|------|---|
| Know | <ul style="list-style-type: none"><li>• The components and steps in the training design cycle</li><li>• Which steps of the training design cycle are important for managers and leadership to be involved with</li><li>• How to identify learning objectives for a given biorisk management scenario</li><li>• Basic training delivery techniques that make training more sustainable</li></ul> |
| Feel | <ul style="list-style-type: none"><li>• Capable of providing people, time, and money to appropriately prioritize and staff biorisk management training programs</li></ul>   |
| Do   | <ul style="list-style-type: none"><li>• Analyze the current situation and the desired outcome to develop learning objectives for a training event or program</li><li>• Evaluate training events or programs to assure that biorisk management competency is established and maintained.</li></ul>   |

## *Key Messages*

1. Training involves transferring knowledge, skills, and abilities to an identified person to create desired behaviors and actions in that person.
2. The training design cycle provides steps for assuring that training is developed in a standardized and strategic manner.
3. Analyzing the current situation and the desired outcomes are key first steps in determining the training necessary.
4. Training is not always the best way to transfer knowledge, skills, and abilities. All options should be considered.
5. Managers need to be aware of what type of delivery creates the most sustainable training environment, especially as they evaluate and assign instructors.
6. Managers must be involved in evaluation of training events to assure that the desired outcome has been reached or progress has been made towards the desired outcome.

## *Evaluation Strategy*

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|------------------------------------|---|
| <i>Level 1<br/>(satisfaction):</i> | Students will complete a satisfaction survey about their experience with the Course   |
| <i>Level 2<br/>(learning):</i>     | Students will complete a “learning contract” for the next steps needed to begin biorisk management implementation   |
| <i>Level 3<br/>(behavior):</i>     | Desired behavior is for students to participate in additional learning opportunities on BRM—this behavior will be evaluated three to six months post-training and may encompass additional training courses |

A repeat of the training needs assessment will be performed at least

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**Level 4**  
**(organizational change):**

Amplitude of this training assessment can be compared with paper performed baseline assessment of this data analysis to determine improvements in biorisk management performance

## Learner Description (for Course design purposes)

*Number of Students:* 10 to 25; small groups of 5 people each

*Biorisk Management Role:*

- ✓ Policy Makers
- ✓ Top Management
- ✓ Biorisk Management Advisors/Advocates
- ✓ Scientific/Lab Management
- ✓ Workforce

*Audience Assumptions:* (assumed range is indicated by shaded cells)

		Novice		Practitioner		Expert
Education	Scientific	1	2	3	4	5
	BRM*	1	2	3	4	5
Expertise	Scientific	1	2	3	4	5
	BRM	1	2	3	4	5
Competence	Scientific	1	2	3	4	5
	BRM	1	2	3	4	5

BRM = "biorisk management". See definitions for terms in Resources section

*Language of instruction; translation or interpretation anticipated:* English (for design purposes)

*Prerequisites* Orientation to Biorisk Management

*Pre- or post-work required for completion* None

*Certificates or documents of completion:* Certificates of completion will be provided

*Preparation for future coursework* This course is a pre-requisite for all other courses in the biorisk management curriculum

*Anticipated next steps* Students will participate in learning tracks, as defined by the local training needs assessment and other subject matter expert (SME) recommendations.

## Instructional Environment

*Number of Instructors/Staff required:*

TBD depending on number of Students – optimal ratio is 1 Instructor per no more than 12 Students

*Instructor Qualifications:*

Instructors must have completed the Global Biorisk Management Curriculum (GBRMC) orientation, including this course, and be enrolled in the GBRMC training network.

## Learning Environment

*Media:*

Instructor-led course.

## Exercises & Activities

*Experience (Activists)*

Students will be asked to consider their experiences in regards to training in BRM.

*Reflection (Reflectors)*

Students will be asked to reflect on those experiences to help develop a model or plan a training in BRM . Students will be asked to reflect on the components and the next steps in the training design cycle.

*Models (Theorists)*

Students will be introduced to a real world scenario in which a review was completed in which they can analyze the situations and evaluate how the process was undertaken

*Practice (Pragmatists)*

Students will be given the real world scenario as a case study to see how the topics discussed are practiced in real life

## On-Site Specifics

*Location*

TBD

*Room organization*

Clusters of tables to facilitate small group (no more than 5 Students per group)

*Dress code and/or important cultural considerations*

TBD

## Instructional Materials

*Equipment & Supplies*

Large flip charts  
Markers (enough for up to 5 groups plus instructor(s))  
6 x 8 inch multicolor Post-it notes (no lines)  
Student binders (1" or less) and tabs  
Pens  
Laptop computer with PowerPoint files loaded  
Projector  
Easels (x ~6)



Name tags/lanyards or placards  
Certificates  
Notepads  
PowerPoint files  
Facilitator notes  
Student handouts/notes pages  
Course evaluation forms  
Reference materials (WHO LBM and Biorisk Management Guidance, SNL Lab Biosecurity handbook, CWA 15793:2008 and CWA guidance documents)

***Student  
Handouts***

Course agenda and schedule  
Student notes  
Glossary  
CWA 15793

**Resources**

***Dependencies***

***Authorities***


***References***

CWA 15793  
CEN WS 55, 53  
WHO Laboratory Biosafety Manual  
Laboratory Biosecurity Handbook  
IBTR Training – Information Security and MC&A (SAND No. 2004-4555P, SAND No. 2005-3288 C)  
DTRA BSL-2 Training – Hazard Criteria and Categorization  
DTRA BSL-3 Training – Bioethics and Biosecurity  
CDC/WHO Laboratory Quality Management System Training Toolkit  
Biosecurity Plan template (in development)  
Glossary of terms (in development)

***Terms used in this  
document***

- Knowledge – remembering the material in the same form as it was taught
- Comprehension – student’s ability to understand the material by (for example) explaining or summarizing key messages
- Application – ability to use the material in a new or given situation
- Synthesis – ability to put together learning material in a new whole entirety. For example, using the material to create a new program or plan.
- Evaluation – ability to judge the value of the material presented as a peer (to be able to critically advise or judge others on their application and synthesis of this learning material).
- Novice – a person who is new to the circumstances, work, etc. in which s/he is placed; beginner
- Practitioner – a person engaged in the practice of a profession; a person who practices something specified



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- Expert – a person who has special skill or knowledge in some particular field; specialist; authority; trained by practice
  - Education – the act of acquiring particular knowledge or skills, as for a profession
  - Expertise – the process of personally observing, encountering or undergoing something; knowledge or practical wisdom gained from what one has observed, encountered, or undergone
  - Competence – Possession of a suitable or sufficient skill, knowledge, experience, etc. for some specified purpose; properly qualified



## Part II: Course Outline/Schedule

Day	Segment time (min)	Time	Topic	Instructional Method	Slide#	KM #	T/F
1	20	00:00	Welcome & Introductions	Lecture, student introductions, course objectives discussion	1-5		T/F
	15	00:20	Biorisk Management	Lecture	6-9		T
	55	00:35	Why Do We Train?	Small group activities	10-15	1,4	F
	60	01:30	Biorisk Management Training: Content	Lecture, small group activities	16-34	2-3	T/F
	10	02:30	BREAK				
	35	02:40	Biorisk Management Training: Delivery	Individual reflection, group activities, lecture	35-43	4-5	T/F
	15	03:15	Evaluating Training	Lecture, small group activity	44-47	5	T/F
	10	03:30	BREAK				
	20	03:40	Review & Wrap-Up	Lecture, plenary discussion	48-52		T
		04:00	End of Course				

KM = key messages ; T/F = teaching versus facilitation (instructor-based versus learner-based)