

Course: Orientation to Biorisk Management

Design Document

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Part I: Course Overview

Course Description

Overview

Orientation to Biorisk Management is intended as the first course encountered by a student in the Global Biorisk Management Curriculum (GBRMC). It is designed to offer a common understanding of the foundation and terminology of Biorisk Management (BRM) and management systems and to lead students towards next steps for becoming more conversant and competent in BRM, regardless of the role they hold.

Scope

This course will provide awareness of biorisk management systems, tools and resources to begin implementation of a biorisk management system. This course will NOT provide details on specific components of biorisk management or of assessment, mitigation, or performance.

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 what “biorisk management” means
- Be prepared to implement biorisk management measures

Instructional Objectives

- Explain what a management system is and what the benefits are to adopting a management system
- Define key biorisk management terminology such as: Biorisk, Biosafety, Biosecurity
- Summarize what the CWA 15793 (Laboratory Biorisk Management Standard)
- Introduce the AMP (Assessment, Mitigation, Performance) model and explain how it can be used in biorisk management
- Describe the tools and resources available to begin to implement biorisk management
- List the next steps for beginning biorisk management implementation

Personal Objectives

Know

- What a management system is; what CWA 15793 is; what the AMP model represents

Feel

- Confident about using the biorisk management approach and using basic biorisk management terminology

Do	<ul style="list-style-type: none"> Move forward to the next steps in beginning a biorisk management implementation.
Key Messages	<ol style="list-style-type: none"> The importance, and distinctions between key biorisk management terminology such as: biorisk, biosafety, biosecurity, biorisk management system AMP (Assessment, Mitigation, and Performance) is a simple model for managing biorisks Implementing a comprehensive biorisk management system is critical to reduce the safety and security risks associated with handling, storage and disposal of biological agents CWA 15793 is a comprehensive framework for managing biorisks developed through international collaboration. Some of the key factors in establishing and implementing a successful biorisk management system include commitment by top management and a focus on continual improvement

Evaluation Strategy

Level 1 (satisfaction):	Students will complete a satisfaction survey about their experience with the course.
Level 2 (learning):	Students will complete a “learning contract” for the next steps needed to begin biorisk management implementation.
Level 3 (behavior):	Students are desired to participate in additional learning opportunities involving BRM – this behavior will be evaluated three to six months post-training and may encompass additional training courses.
Level 4 (organizational change):	Annual training needs assessment will be performed and compared to the baseline assessment to determine improvements in biorisk management performance

Student Description (for course design purposes)

Number of students:	10 to 25; small groups of 5 people each
Biorisk Management Role:	<ul style="list-style-type: none"> ✓ Policy Makers ✓ Top Management ✓ Biorisk Management Advisors/Advocates ✓ Scientific/Lab Management ✓ Laboratory 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

None

**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 global 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

Exercises & Activities

Experience (Activists)	Students will be asked to consider their experiences with their work in regard to safe and secure handling of biological agents and toxins
Reflection (Reflectors)	Students will be asked to reflect on those experiences to help develop a model for effective safe and secure handling of biological agents and toxins; students will be asked to reflect on the next steps for working towards biorisk management in their work
Models (Theorists)	Students will be introduced, through their own experiences and reflections, to management system models: 1. Assessment, Mitigation, Performance (AMP) 2. Plan – Do – Check – Act (PDCA)
Practice (Pragmatists)	Students will be given the opportunity to develop examples of the AMP and PDCA models, as well as describe next steps for applying these models in their facility.

On-Site Specifics

<i>Location</i>	TBD
<i>Room organization</i>	Clusters of tables to facilitate small groups (no more than 5 students per group)
<i>Dress code and/or important cultural considerations</i>	TBD

Instructional Materials

<i>Equipment & Supplies</i>	
<i>Student Handouts</i>	Student notes Glossary CWA 15793

Resources

<i>Dependencies</i>	WHO Biorisk Management course
<i>Authorities</i>	
<i>References</i>	CWA 15793 CEN WS 55, 53 WHO Laboratory Biosafety Manual CDC/NIH BMBL Glossary of terms (in development)
<i>Terms used in this</i>	<ul style="list-style-type: none"> Knowledge – remembering the material in the same form as it was

document

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
- 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
			Pre-Work	Participants should have completed the Training Needs Assessment Perceptual Audit and instructor should be prepared with a summary of the results from all of the participants.			
1	10	00:00	Welcome & Introductions				T
	20	00:10	Course Objectives – Instructor & Student Establish Ground Rules	Reflection, then plenary activity to address Know, Feel, Do – post-its			F
	20	00:30	What are risks of working in a biolab?	Small group discussion; plenary discussion		1	F
	10	00:50	BREAK				
	10	01:00	How do you identify risks in your lab?	Small group discussion; answers on post-its		1	F
	10	01:10	How do you manage these risks	Small group discussion; answers on post-its		1	F
	10	01:20	How do you know that it is working and will continue to work?	Small group discussion; answers on post-its		1	F
	10	01:30	Define Assessment, Mitigation and Performance	Instructor presentation		1	T
	10	01:40	Creating a biorisk management system	Small group activity; plenary discussion		2	F
	10	01:50	BREAK				
	10	02:00	Introduce KM #2	Instructor presentation		2	T
	15	02:10	What is a management system and why is it important?	Small group discussion; plenary discussion		3	F
	5	02:25	Introduce KM #4	Instructor presentation		4	T

	30	02:30	Using the CWA	Scenario based small group activity to explore KM #4		4	F
	10	03:00	BREAK				
	20	03:10	Debrief KM #4	Review of the perception audit results; individual reflection (three things missing from my facility)			F
	15	03:30	Introduce KM #5. What are some key factors in establishing and implementing a BRM system?	Small group discussion; plenary discussion			F
	15	03:45	Debrief	What? So what? Now what? (elevator speech role play)			F

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