SAINT LOUIS UNIVERSITY.

Program Assessment Plan

Program: **Master of Science (MS) in Biosecurity & Disaster Preparedness (BSDP)**

Department: **Epidemiology & Biostatistics**

College/School: **College for Public Health and Social Justice**

Date: **6/1/18**

Primary Assessment Contact: **Terri Rebmann**

Program Learning Outcomes	Assessment Mapping	Assessment Methods	Use of Assessment Data
What do the program faculty expect all students to know, or be able to do, as a result of completing this program? *Note: These should be measurable, and manageable in number (typically 4-6 are sufficient).*	From what specific courses (or other educational/professional experiences) will artifacts of student learning be analyzed to demonstrate achievement of the outcome? Include courses taught at the Madrid campus and/or online as applicable.	What specific artifacts of student learning will be analyzed? How, and by whom, will they be analyzed? ▪ *Note: the majority should provide direct, rather than indirect, evidence of achievement.* Please note if a rubric is used and, if so, include it as an appendix to this plan.	How and when will analyzed data be used by faculty to make changes in pedagogy, curriculum design, and/or assessment work? How and when will the program evaluate the impact of assessment-informed changes *made in previous years*?

Competency 1: Use an evidence-based approach to develop and analyze human, animal, and environmental hazard control strategies, programs, and policies, taking into account legal and ethical considerations Learning outcome 1a: Identify and cite relevant sources. Learning outcome 1b: Apply information from relevant sources appropriately Learning outcome 1c: Apply/use biosecurity nomenclature and terminology (such as "isolation" and "quarantine") related to infectious diseases accurately	Courses that cover this competency and assess the learning outcomes: BSDP 5103 BSDP 5203 BSDP 5960	Data is collected throughout the academic year and assessed during the annual Institute for Biosecurity Strategic Planning Retreat/Meeting by all full-time and adjunct faculty who attend the Retreat. Direct measures: Student performance is assessed via various assignments in the courses. For the purposes of program assessment, student performance on the culminating assignments in BSDP 5960 (development of a publishable quality paper/project related to a biosecurity-related topic), BSDP 5103 (development of an infectious disease outbreak scenario paper) and BSDP 5203 (assessment of an agency/organization emergency management plan paper) will be used. Assignments from randomly-selected students will be used for program assessment. Student assignments will be de-identified before review to maintain confidentiality. Faculty review each data artifact and determine/rank the extent to which they believe the student achieved the learning outcome measure, using the following ranking system identified on the rubric: excellent, good, fair, or poor (see definitions of each on the rubric). The goal is to have ≥ 75% of the assessed students achieve an "excellent" or "good" ranking on each of the assessed learning outcome measures from these culminating projects. Indirect Measures: An exit survey is conducted with each graduating student to assess perceived ability to perform the competencies. Students' perceived confidence in performing the program competencies and perceived confidence that they can use and/or interpret the terms and nomenclature of the field are both measured on a 5-point Likert scale consisting of "Very confident", "Somewhat confident", "Neither confident nor unconfident", "Somewhat unconfident", or "Very unconfident". The goal is to have ≥ 75% of the graduating students indicate a positive response on each of the two perceived confidence questions (i.e., "very confident" or "somewhat confident").	Data on all direct and indirect measures will be reviewed at the annual Institute Strategic Planning Retreat/Meeting. Necessary curricular changes will be discussed and incorporated as needed, based on Program Assessment data. A report summarizing the findings will be generated after the Retreat and will be shared with all relevant stakeholders (students, faculty, administration) via email and announcement/discussion at a Departmental monthly meeting.

Competency 2: Analyze and apply the scientific characteristics, such as transmission routes and control measures, of major biological hazards to develop interventions that minimize human and animal disease Learning outcome 2a: Develop appropriate interventions that minimize human and animal disease Learning outcome 2b: Integrate appropriate scientific characteristics of an infectious disease into a scenario or case study	Courses that cover this competency and assess the learning outcomes: BSDP 5103 BSDP 5203 BSDP 5960	Data is collected throughout the academic year and assessed during the annual Institute for Biosecurity Strategic Planning Retreat/Meeting by all full-time and adjunct faculty who attend the Retreat. Direct measures: Student performance is assessed via various assignments in the courses. For the purposes of program assessment, student performance on the culminating assignments in BSDP 5960 (development of a publishable quality paper/project related to a biosecurity-related topic), BSDP 5103 (development of an infectious disease outbreak scenario paper) and BSDP 5203 (assessment of an agency/organization emergency management plan paper) will be used. Assignments from randomly-selected students will be used for program assessment. Student assignments will be de-identified before review to maintain confidentiality. Faculty review each data artifact and determine/rank the extent to which they believe the student achieved the learning outcome measure, using the following ranking system identified on the rubric: excellent, good, fair, or poor (see definitions of each on the rubric). The goal is to have ≥ 75% of the assessed students achieve an "excellent" or "good" ranking on each of the assessed learning outcome measures from these culminating projects. Indirect Measures: An exit survey is conducted with each graduating student to assess perceived ability to perform the competencies. Students' perceived confidence in performing the program competencies and perceived confidence that they can use and/or interpret the terms and nomenclature of the field are both measured on a 5-point Likert scale consisting of "Very confident", "Somewhat confident", "Neither confident nor unconfident", "Somewhat unconfident", or "Very unconfident". The goal is to have ≥ 75% of the graduating students indicate a positive response on each of the two perceived confidence questions (i.e., "very confident" or "somewhat confident").	Data on all direct and indirect measures will be reviewed at the annual Institute Strategic Planning Retreat/Meeting. Necessary curricular changes will be discussed and incorporated as needed, based on Program Assessment data. A report summarizing the findings will be generated after the Retreat and will be shared with all relevant stakeholders (students, faculty, administration) via email and announcement/discussion at a Departmental monthly meeting.

Competency 3: Create and disseminate tailored messages regarding biosecurity hazards and risks to responders, the public, the media, and policy makers Learning outcome 3a: Communicate the biosecurity hazards and risks related to a scenario or case study Learning outcome 3b: Develop a health communication message that is appropriate for the intended audience	Courses that cover this competency and assesses the learning outcomes: BSDP 5203 BSDP 5960	Data is collected throughout the academic year and assessed during the annual Institute for Biosecurity Strategic Planning Retreat/Meeting by all full-time and adjunct faculty who attend the Retreat. Direct measures: Student performance is assessed via various assignments in the courses. For the purposes of program assessment, student performance on the culminating assignment in BSDP 5960 (development of a publishable quality paper/project related to a biosecurity-related topic) and BSDP 5203 (assessment of an agency/organization emergency management plan paper) will be used. Assignments from randomly-selected students will be used for program assessment. Student assignments will be de-identified before review to maintain confidentiality. Faculty review each data artifact and determine/rank the extent to which they believe the student achieved the learning outcome measure, using the following ranking system identified on the rubric: excellent, good, fair, or poor (see definitions of each on the rubric). The goal is to have ≥ 75% of the assessed students achieve an "excellent" or "good" ranking on each of the assessed learning outcome measures from the culminating projects. Indirect Measures: An exit survey is conducted with each graduating student to assess perceived ability to perform the competencies. Students' perceived confidence in performing the program competencies and perceived confidence that they can use and/or interpret the terms and nomenclature of the field are both measured on a 5-point Likert scale consisting of "Very confident", "Somewhat confident", "Neither confident nor unconfident", "Somewhat unconfident", or "Very unconfident". The goal is to have ≥ 75% of the graduating students indicate a positive response on each of the two perceived confidence questions (i.e., "very confident" or "somewhat confident").	Data on all direct and indirect measures will be reviewed at the annual Institute Strategic Planning Retreat/Meeting. Necessary curricular changes will be discussed and incorporated as needed, based on Program Assessment data. A report summarizing the findings will be generated after the Retreat and will be shared with all relevant stakeholders (students, faculty, administration) via email and announcement/discussion at a Departmental monthly meeting.

Competency 4: Analyze qualitative and quantitative data to accurately identify biological and other health hazards and measure risks, using epidemiological, statistical, and risk assessment methods and tools, such as syndromic surveillance Learning outcome 4a: Communicate the biosecurity hazards and risks related to a research topic, scenario, or case study Learning outcome 4b: Develop a health communication message that is appropriate for the intended audience	Course that cover this competency and assesses the learning outcomes: BSDP 5960	Data is collected throughout the academic year and assessed during the annual Institute for Biosecurity Strategic Planning Retreat/Meeting by all full-time and adjunct faculty who attend the Retreat. Direct measures: Student performance is assessed via various assignments in the courses. For the purposes of program assessment, student performance on the culminating assignment in BSDP 5960 (development of a publishable quality paper/project related to a biosecurity-related topic) will be used. Assignments from randomly-selected students will be used for program assessment. Student assignments will be de-identified before review to maintain confidentiality. Faculty review each data artifact and determine/rank the extent to which they believe the student achieved the learning outcome measure, using the following ranking system identified on the rubric: excellent, good, fair, or poor (see definitions of each on the rubric). The goal is to have ≥ 75% of the assessed students achieve an "excellent" or "good" ranking on each of the assessed learning outcome measures from the culminating projects. Indirect Measures: An exit survey is conducted with each graduating student to assess perceived ability to perform the competencies. Students' perceived confidence in performing the program competencies and perceived confidence that they can use and/or interpret the terms and nomenclature of the field are both measured on a 5-point Likert scale consisting of "Very confident", "Somewhat confident", "Neither confident nor unconfident", "Somewhat unconfident", or "Very unconfident". The goal is to have ≥ 75% of the graduating students indicate a positive response on each of the two perceived confidence questions (i.e., "very confident" or "somewhat confident").	Data on all direct and indirect measures will be reviewed at the annual Institute Strategic Planning Retreat/Meeting. Necessary curricular changes will be discussed and incorporated as needed, based on Program Assessment data. A report summarizing the findings will be generated after the Retreat and will be shared with all relevant stakeholders (students, faculty, administration) via email and announcement/discussion at a Departmental monthly meeting.

Competency 5: Apply disaster risk management principles in program, organizational, and community initiatives Learning outcome 5a: Identify disaster or biosecurity practice implications related to a scholarly research paper topic, scenario, or case study Learning outcome 5b: Outline relevant interventions or future studies that should be implemented to address a gap in the biosecurity field	Course that cover this competency and assesses the learning outcomes: BSDP 5960	Data is collected throughout the academic year and assessed during the annual Institute for Biosecurity Strategic Planning Retreat/Meeting by all full-time and adjunct faculty who attend the Retreat. Direct measures: Student performance is assessed via various assignments in the courses. For the purposes of program assessment, student performance on the culminating assignment in BSDP 5960 (development of a publishable quality paper/project related to a biosecurity-related topic) will be used. Assignments from randomly-selected students will be used for program assessment. Student assignments will be de-identified before review to maintain confidentiality. Faculty review each data artifact and determine/rank the extent to which they believe the student achieved the learning outcome measure, using the following ranking system identified on the rubric: excellent, good, fair, or poor (see definitions of each on the rubric). The goal is to have ≥ 75% of the assessed students achieve an "excellent" or "good" ranking on each of the assessed learning outcome measures from the culminating projects. Indirect Measures: An exit survey is conducted with each graduating student to assess perceived ability to perform the competencies. Students' perceived confidence in performing the program competencies and perceived confidence that they can use and/or interpret the terms and nomenclature of the field are both measured on a 5-point Likert scale consisting of "Very confident", "Somewhat confident", "Neither confident nor unconfident", "Somewhat unconfident", or "Very unconfident". The goal is to have ≥ 75% of the graduating students indicate a positive response on each of the two perceived confidence questions (i.e., "very confident" or "somewhat confident").	Data on all direct and indirect measures will be reviewed at the annual Institute Strategic Planning Retreat/Meeting. Necessary curricular changes will be discussed and incorporated as needed, based on Program Assessment data. A report summarizing the findings will be generated after the Retreat and will be shared with all relevant stakeholders (students, faculty, administration) via email and announcement/discussion at a Departmental monthly meeting.

Additional Questions

1. On what schedule/cycle will faculty assess each of the above-noted program learning outcomes? *(It is <u>not recommended</u> to try to assess every outcome every year.)*

Each year, two learning outcomes, on average, will be assessed. Please see the attached "Planned Timeline for Assessing the Program Learning Outcome Measures" for a list of the dates for when each learning outcome will be assessed.

2. Describe how, and the extent to which, program faculty contributed to the development of this plan.

The program assessment plan was drafted by the Program Director. It was then shared with the other full-time and adjunct BSDP faculty (who are external to SLU). All full-time and adjunct faculty were consulted in the development of program competencies and learning outcomes, and how these would be assessed. The plan was discussed as a group and modifications were made as needed. This process is repeated annually during the Institute Strategic Planning Retreat/Meeting at which program assessment is also conducted. Furthermore, meeting minutes are distributed to all adjunct faculty and their input is sought related to program competencies, course objectives, and program assessment planning and feedback is incorporated as needed.

3. On what schedule/cycle will faculty review and, if needed, modify this assessment plan?

The MS in Biosecurity & Disaster Preparedness program will be formally assessed annually at the Institute Strategic Planning Retreat/Meeting. The plan and student outcomes will be assessed at this meeting, and revisions will be made to the assessment plan as needed. In addition, updates to the curriculum will be made when applicable, based on data from the Program Assessment process.

Course Name	BSDP 5100 Public Health & Disasters	BSDP 5101 Fundamentals of Disaster Planning	BSDP 5103 Commun Dis & Infection Control	BSDP 5203 Planning for Infect Dis Disasters	BSDP 5206 Disaster Management & Risk Analysis	BSDP 5960 Capstone
MS Core Competencies						
BSDP 1: Use an evidence-based approach to develop and analyze human, animal, and environmental hazard control strategies, programs, and policies, taking into account legal and ethical considerations	Covered	Covered	Covered & assessed	Covered & assessed	Covered	Covered & assessed
BSDP 2: Analyze and apply the scientific characteristics, such as transmission routes and control measures, of major biological hazards to develop interventions that minimize human and animal disease	Covered		Covered & assessed	Covered & assessed		Covered & assessed
BSDP 3: Create and disseminate tailored messages regarding biosecurity hazards and risks to responders, the public, the media, and policy makers	Covered		Covered	Covered & assessed	Covered	Covered & assessed
BSDP 4: Analyze qualitative and quantitative data to accurately identify biological and other health hazards and measure risks, using epidemiological, statistical, and risk assessment methods and tools, such as syndromic surveillance	Covered	Covered		Covered		Covered & assessed
BSDP 5: Apply disaster risk management principles in program, organizational, and community initiatives	Covered	Covered			Covered	Covered & assessed

Planned Timeline for Assessing the MS Program Learning Outcome Measures

Learning Outcome Measure	Year It Will be Examined During the Program Assessment Process*
1a. Select appropriate data analysis approaches/techniques	2018
1b. Review and summarize the scientific literature to learn more about a research topic	2018
2a: Identify and cite relevant sources	2019
2b: Apply information from relevant sources appropriately	2019
2c: Apply/use biosecurity nomenclature and terminology (such as “isolation” and “quarantine”) related to infectious diseases accurately	2020
3a: Develop appropriate interventions that minimize human and animal disease	2020
3b: Integrate appropriate scientific characteristics of an infectious disease into a scholarly research paper, scenario, or case study	2021
4a: Communicate the biosecurity hazards and risks related to a research topic, scenario, or case study	2021
4b: Develop a health communication message that is appropriate for the intended audience	2022
5a. Identify disaster or biosecurity practice implications related to a scholarly research paper topic, scenario, or case study	2022
5b. Outline relevant interventions or future studies that should be implemented to address a gap in the biosecurity field	2022

*Timeline will end when the last MS student graduates, which is likely to be before all learning outcome measures have been assessed during an annual assessment.

Assessment Rubric for the Masters of Science in Biosecurity & Disaster Preparedness Program

Class & assignment	Competency	Learning outcomes (LO) linked to program competencies	Extent to which students demonstrate achievement of LO (Excellent, good, fair, or poor)
BSDP 5103 Development of an infectious disease outbreak scenario paper	1: Use an evidence-based approach to develop and analyze human, animal, and environmental hazard control strategies, programs, and policies, taking into account legal and ethical considerations.	1a: Identify and cite relevant sources	
		1b: Apply information from relevant sources appropriately	
		1c: Apply/use biosecurity nomenclature and terminology (such as "isolation" and "quarantine") related to infectious diseases accurately	
	2: Analyze and apply the scientific characteristics, such as transmission routes and control measures, of major biological hazards to develop interventions that minimize human and animal disease.	2a: Develop appropriate interventions that minimize human and animal disease	
		2b: Integrate appropriate scientific characteristics of an infectious disease into a scenario or case study	
BSDP 5203 Assessment of an agency/organization emergency management plan paper	1: Use an evidence-based approach to develop and analyze human, animal, and environmental hazard control strategies, programs, and policies, taking into account legal and ethical considerations.	1a: Identify and cite relevant sources	
		1b: Apply information from relevant sources appropriately	
		1c: Apply/use biosecurity nomenclature and terminology (such as "isolation" and "quarantine") related to infectious diseases accurately	
	2: Analyze and apply the scientific characteristics, such as transmission routes and control measures, of major biological hazards to develop interventions that minimize human and animal disease.	2a: Develop appropriate interventions that minimize human and animal disease	
		2b: Integrate appropriate scientific characteristics of an infectious disease into a scenario or case study	
	3: Create and disseminate tailored messages regarding biosecurity hazards and risks to responders, the public, the media, and policy makers	3a: Communicate the biosecurity hazards and risks related to a scenario or case study	
		3b: Develop a health communication message that is appropriate for the intended audience	
BSDP 5960 Biosecurity Capstone	1. Use an evidence-based approach to develop and analyze human, animal, and environmental hazard control strategies, programs, and policies, taking into account legal and ethical considerations.	1a: Identify and cite relevant sources	
		1b: Apply information from relevant sources appropriately	
		1c: Apply/use biosecurity nomenclature and terminology (such as "isolation" and "quarantine") related to infectious diseases accurately	
	2: Analyze and apply the scientific	2a: Develop appropriate interventions that minimize human	

	characteristics, such as transmission routes and control measures, of major biological hazards to develop interventions that minimize human and animal disease.	and animal disease	
		2b: Integrate appropriate scientific characteristics of an infectious disease into a scholarly research paper, scenario, or case study	
	3: Create and disseminate tailored messages regarding biosecurity hazards and risks to responders, the public, the media, and policy makers	3a: Communicate the biosecurity hazards and risks related to a research topic, scenario, or case study	
		3b: Develop a health communication message that is appropriate for the intended audience	
	4: Analyze qualitative and quantitative data to accurately identify biological and other health hazards and measure risks, using epidemiological, statistical, and risk assessment methods and tools, such as syndromic surveillance	4a. Select appropriate data analysis approaches/techniques	
		4b. Review and summarize the scientific literature to learn more about a research topic	
	5. Apply disaster risk management principles in program, organizational, and community initiatives	5a. Identify disaster or biosecurity practice implications related to a scholarly research paper topic, scenario, or case study	
		5b. Outline relevant interventions or future studies that should be implemented to address a gap in the biosecurity field	

Demonstrates achievement ranking system: Excellent (consistent and accurate), good (almost always and usually accurate), fair (not consistent and/or multiple mistakes), or poor (very inconsistent/missing and/or many mistakes)