



**VETPREV 7723 – Biosecurity, Emergency Response & Outbreak Investigation
2 credit hours – Spring 2020**

Course Leader:

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Teaching Assistant:

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Class Time and Location: Monday (2:00-3:55 PM); A180 Sisson Hall

Course description: This course will provide an overview of biosecurity, with special emphasis on bioterrorism, preparedness, emergency response, risk assessment, and management of zoonotic and foreign animal disease outbreaks. The regulations and regulatory agencies involved in preventing and controlling foreign animal and zoonotic diseases will also be presented in this section. This course is appropriate for graduate or professional students in public health and other health sciences.

Prerequisites: Open to 1st (second semester), 2nd, or 3rd year students in the Professional Veterinary Medicine program, or Graduate standing.

Class Format: The teaching strategy of this course will be based primarily on lectures. The course will be presented by faculty from the Department of Veterinary Preventive Medicine and invited guest lecturers with expertise on specific course topic areas. Students are strongly encouraged to visit the course site on CARMEN (<https://carmen.osu.edu/>) regularly and print/download lecture materials in advance. Assigned readings should be used to expand on the information for specific topics.

Course Objectives:

After completion of this course, the students should be able to:

1. Identify the basic principles of biosecurity, biocontainment, and biosafety.
2. Recognize the most important biological and bioterrorist threats to the US and determine how to assess those risks.
3. Be prepared to respond to an outbreak of a foreign animal and/or zoonotic disease at the local to international level.
4. Identify the most important regulations and laws pertaining to zoonotic/foreign animal diseases, and the agencies with the authority to set and enforce those laws.

Core Competencies:

This course addresses the following competencies:

MPH Core

1. Communicate audience-appropriate public health content, both in writing and through oral presentation. (19)
2. Perform effectively on interprofessional teams. (21)
3. Apply systems thinking tools to a public health issue. (22)



VPH Specialization

1. Describe common zoonotic and foodborne infectious diseases, with respect to their etiology and epidemiology especially those classified as reportable, bioterrorism threats, or have a major impact on public health and/or agriculture. (1)
2. Identify the major pathways for transmission of zoonotic agents and foodborne hazards to humans, as well as the reservoirs for many common pathogens. (2)
3. Identify methods and programs utilized to prevent, control and/or eradicate zoonotic and foodborne diseases, including pre- and post-harvest intervention programs. (4)
4. Evaluate the integrity of emergency preparedness programs, including biosecurity, biocontainment, and natural disaster response plans. (5)
5. Review and apply methods for planning, initiating and conducting case and outbreak investigations of zoonotic and foodborne diseases. (6)
6. Recognize applicable regulations and laws governing zoonotic diseases, food safety and security, or foreign animal diseases, and the agencies with authority to enforce these laws. (7)
7. Define the role of epidemiology in maintaining human and animal health; and identify strategies in the design and conduct of surveillance, monitoring, and epidemiological studies that assess the prevalence and distribution of zoonotic and foodborne diseases. (8)
8. Analyze approaches for assessing and controlling environmental and biological agents and strategies for reducing risks to human and animal health, especially in agricultural settings. (9)
9. Use individual, team, and organizational learning opportunities for personal and professional development. (11)

Text/Readings: All required course materials and recommended readings will be accessible on the course Canvas site, as appropriate.

Grading: Grading will utilize the standard university grading scale (*note: final course grades are not rounded*):

A	93-100	C+	77-<80
A-	90-<93	C	73-<77
B+	87-<90	C-	70-<73
B	83-<87	D+	67-<70
B-	80-<83	D	60-<67
		E	<60

The final grade points will be distributed across two written exams (70%), assignments (total 25%), and participation (5%). Final course grades will be determined as follows:

Component	Distribution	Assessment Type
Exam 1	35%	Type 1
Exam 2	35%	Type 1
Assignment (Outbreak Response Case Study)	25%	Type 5
Incident Command System: IS-100.C	(5%)	
Incident Command System: IS-200.C	(5%)	
After Action Report	(15%)	
Participation	5%	



For students taking the course to fulfill graduate program requirements in the area of specialization, a grade of B- or higher will be required in order to earn the credits. A grade below B- will require the student to repeat the course. A student who fails to earn a grade of B- or better on a second attempt will be considered to have failed this requirement. Credit hours for the repeated course shall in no case be counted more than once in meeting graduation requirements.

Exams: The written exams will be given in-class, and will be a combination of true/false, multiple choice, and/or short answer questions. ***The second exam will not be cumulative.*** In the event of a planned absence the day of the exam, the student should notify the team leader at least 24 hours in advance. If the student has an unplanned absence the day of the exam, he/she must contact the team leader as soon as possible. The decision on whether or not an exam may be made up will be on a case-by-case basis.

Assignments: Students are required to participate in and complete the Outbreak Response Case Study, including the core Incident Command System (ICS) training (IS-100.C and IS-200.C) and After Action Report. The Case Study will be a continuous (longitudinal) scenario that students will complete through the course Carmen page. Weekly “injects” will be revealed over the semester and will provide students with an opportunity to apply concepts presented in lectures. Further assignment instructions will be provided through the course Carmen page. As instructed, please upload completed materials (e.g., ICS completion certificates) to the course Carmen page by the provided deadline (**ICS certificates: February 9 at 11:59pm; After Action Report: April 15 at 11:59pm**). You will need a FEMA SID to complete the ICS evaluations to receive course certificates of completion – visit <https://cdp.dhs.gov/femasid> to apply for an SID if you do not have one. If you have previously taken either of these courses, you may select alternative courses (notify team leader first). See *Independent Study of Incident Command System* handout for more information.

Carmen: All relevant materials will be posted on Carmen, including the presentation handouts to be brought to each class.

Class Policies:

Electronic Device Policy:

As a courtesy to others, the use of mobile devices such as cell phones, iPods, pagers, and other text messaging devices will not be permitted in class. If a student needs to keep their mobile device on vibrate during a class, please alert the instructor before class begins. Students are permitted to use computers or electronic notepads during class for note-taking and other class-related work only. Those using computers during class for work not related to that class will be asked to discontinue the use of such devices for the remainder of the semester.

During an exam, your cell phone and all other electronic devices should be stored securely in such a way that it cannot be seen or used. The visible presence of such a device during an exam may result in a zero for the exam and is considered de facto evidence of cheating. You may use your cell phone for emergency notification purposes during an exam if you notify the instructor prior to such use.

Absence and Make-Up Policy:

- Let the instructor know 24 hours before an absence.
- If an unexpected absence occurs, let the instructor know within 48 hours in order to justify the absence.
- If 25% or more of the classes are missed (excusable or not), you will be dismissed from the class.
- If there is an excusable conflict with an exam date, let the instructor know.



Academic Integrity:

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understood the University's Code of Student Conduct and the respective School/College's Student Handbook, and that all students will complete all academic and scholarly assignments with fairness and honesty. The Code of Student Conduct and other information on academic integrity and academic misconduct can be found at the COAM web pages (<http://oaa.osu.edu/coam.html>). Students must recognize that failure to follow the rules and guidelines established in the University's Code of Student Conduct, the corresponding Student Handbook, and in the syllabi for their courses may constitute "Academic Misconduct."

The Ohio State University's Code of Student Conduct (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, possession of unauthorized materials during an examination, and any unauthorized retention and/or reproduction of assessment questions. Please note that the use of material from the Internet without appropriate acknowledgement and complete citation is plagiarism just as it would be if the source were printed material. Further examples are found in the Student Handbook or College's Honor Code of each respective School or College. For example, <http://cph.osu.edu/students/graduate/handbooks> for the College of Public Health and the <https://goo.gl/aGCU15> for the College of Veterinary Medicine's Honor Code. Ignorance of the Code of Student Conduct and the corresponding Student Handbook/Honor Code is never considered an "excuse" for academic misconduct.

The University expects that all students have read and understand the University's Code of Student Conduct, and that all students will complete all academic and scholarly assignments with fairness and honesty. For further information, students should refer to the College's Student Handbook and The Ohio State University Code of Student Conduct (http://studentaffairs.osu.edu/resource_csc.asp). Failure to follow the rules and guidelines may constitute "Academic Misconduct." Sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the College.

Other sources of information on academic misconduct (integrity) include:

- The Committee on Academic Misconduct web page: <http://oaa.osu.edu/coam.html>
- Ten Suggestions for Preserving Academic Integrity: <http://oaa.osu.edu/coamtensuggestions.html>
- Eight Cardinal Rules of Academic Integrity: www.northwestern.edu/uacc/8cards.html

If I suspect a student of academic misconduct in the course, I am obligated by University Rules to report these suspicions to the corresponding authority at the University. In the case of veterinary students, the College of Veterinary Medicine's Judicial Committee is responsible for establishing and implementing procedures for investigating all reported cases of student academic misconduct.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact the Team Leader.

Student Support:

A recent American College Health Survey found stress, sleep problems, anxiety, depression, interpersonal concerns, death of a significant other and alcohol use among the top ten health impediments to academic performance. Students experiencing personal problems or situational crises during the semester are encouraged to contact OSU Counseling and Consultation Services (292-5766; <http://www.ccs.ohio->



[state.edu](#)) for assistance, support and advocacy. This service is free to students and is confidential. It is the responsibility of each student to self-identify and report to the corresponding authority (i.e. for veterinary students is the college's ADA Coordinator el-Khoury.7@osu.edu) any situation or circumstance that may prevent him/her from acquiring and demonstrating the full range of required skills.

Any policies about attendance, using computers, cell phones, or pagers needs to be included on the syllabus. If you have other policies listed under exams and assignments, you can direct the student to read those sections.

Office of Student Life: Disability Services:

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Office of Student Life: Disability Services at 614-292-3307 in Room 098 Baker Hall 113 W. 12th Ave. to coordinate reasonable accommodations for students with documented disabilities (<http://slds.osu.edu/>).

Mental Health Services:

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting <https://ccs.osu.edu/> or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org.



Course Outline

Week	Date	Instructor	Lecture Topic / Assignment
1	1/6	Berrian	Introduction
			Bioterrorism/Agroterrorism
2	1/13	Berrian	Principles of Biosecurity
		Meeker	Laboratory Animal Biosecurity
3	1/20	N/A	NO CLASS – HOLIDAY
	Friday, 1/24 (12-12:50pm)	Coggeshall	SPECIAL SEMINAR: Event-Based Surveillance: CDC Global Disease Detection
4	1/27	Bachmann	The Disaster Cycle
		Wollerman	Public Health Emergency Preparedness: State and Local Response
5	2/3	N/A	NO CLASS 2-2:50 pm (make up for 1/24)
		Stull	Disease Surveillance & Monitoring Systems
6	2/10	Davis	Incident Command System & Disaster Response: Regional, National, International
			USDA Emergency Response Plans
7	2/17	Berrian	EXAM 1 (weeks 1-6)
		Halcomb	Outbreak Response: Personal Protective Equipment (PPE) Guidelines
8	2/24	Halcomb	Outbreak Response: Cleaning and Disinfection
9	3/2	Berrian/ Halcomb/ Hammons	PPE Exercise
10	3/9	N/A	NO CLASS – SPRING BREAK
11	3/16	Lyons	Euthanasia & Mass Depopulation
			Carcass Disposal
12	3/23	USDA Team	Case Examples: Disaster Preparedness & Response
13	3/30	Berrian	EXAM 2 (weeks 7-12)
14	4/6	Schwartz	OH Emergency Operations Center (Field Trip)
15	4/13	Berrian	Outbreak Response Case Study Discussion
16	4/20	Berrian	Hot Topics
17	TBD	Berrian	OUTBREAK RESPONSE CASE STUDY AFTER ACTION ACTIVITY

Guest Lecturers:

Daniel Bachmann, MD, FACEP – Ohio Task Force ONE, FEMA US&R OSU Dept Emergency Medicine

Kira A. Coggeshall, DVM, MPH, DACVPM – CDC, Global Disease Detection Operations Center

Jamie Davis, DVM – USDA, APHIS, Veterinary Services

Stacey Meeker, DVM, PhD, DAACLAM – The Ohio State Univ., Dept Prev. Vet. Med.

Mark Lyons, DVM – USDA, APHIS, Veterinary Services

Brad Schwartz – Ohio Dept of Public Safety



THE OHIO STATE UNIVERSITY

COLLEGE OF VETERINARY MEDICINE

Amber Singh, DVM, MHP – Ohio Department of Health

Jason Stull, VMD, MPVM, PhD – The Ohio State Univ., Dept of Prev. Veterinary Med.

Eva Wollerman, MPH-VPH – Franklin County Public Health