The Ohio State College of Veterinary Medicine

Department of Veterinary Preventive Medicine

Veterinary Public Health Specialization

VETPREV 7721

 “Epidemiology of Zoonoses and Diseases Common to Animals and Humans”

3 Credit Hours

Fall Semester, 2023

# **COURSE INFORMATION**

## Instructors

Dr. Armando E Hoet, Sisson Hall, A188, 292-8157, hoet.1@osu.edu (Instructor)

Dr. Thomas Wittum, Sisson Hall, A180, Wittum.1@osu.edu (Co-Instructor)

Dr. Emily Janovyak, Ohio Dept of Agriculture ADDL, janovyak.2@osu.edu (Graduate Teaching Associate)

## Class Time and Location

Monday (4:00-4:50 PM) & Wednesday (4:00-5:50 PM) | Funderberg Conference Room (Sisson A180)

## Communication

Please direct all course-related communication to Dr. Janovyak via email, with CC to Dr. Hoet. Virtual office hours are available by appointment.

## Course Description

This course is focused on describing the basic epidemiology of common and important zoonotic diseases. Instruction will emphasize the use of such knowledge in the establishment of prevention and control strategies specific to these zoonoses. The importance of safeguarding public and animal health from such diseases will be highlighted throughout the course. This course is divided into two major sections. The aim of the first section is to develop an understanding of important concepts relating to animal infectious diseases, such as definitions and categories of zoonoses, causation and disease association, regulatory agencies and zoonotic diseases, diagnostic techniques, and other related topics. The second section will be a comprehensive review of the most common zoonotic diseases that can be transmitted to humans. For each disease, students will learn the etiologic agent, epidemiology, the most common manifestations of the disease in humans and animals, diagnostic procedures for detection, as well as prevention and control measures. Special topics about veterinary public health (VPH) and small animal populations, wildlife, and laboratory animals will be also covered.

## Class Format

The teaching strategy of this course will be based primarily on lectures. Students are highly encouraged to visit the course site on CARMEN Canvas (<https://carmen.osu.edu/>) regularly and print or download lecture materials in advance. Throughout the course, faculty members from the Veterinary Preventive Medicine Department and invited guest lecturers will teach the different classes. Their names and contact information can be found in the Course Schedule. Assigned readings should be used to expand on the information regarding a specific topic.

## Course Learning Objectives

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

1. Identify and apply basic concepts and definitions of zoonoses and diseases common to animals and humans.
2. Identify the most common zoonotic diseases with respect to their etiology, epidemiology, as well as specific preventive and control measures.

## Core Competencies

Core MPH Competencies for all MPH students:

1. Describe common zoonotic 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.
2. Identify the major pathways for transmission of zoonotic agents to humans, as well as the reservoirs for many common pathogens.
3. Identify methods and instruments for collecting and transporting valid and reliable samples, determine the appropriate diagnostic technique for human, animal, arthropod, food product, and/or environmental specimens, and provide an accurate interpretation of the results.
4. Identify methods and programs utilized to prevent, control and/or eradicate zoonotic and foodborne diseases, including pre- and post-harvest intervention programs.
5. Review and apply methods for planning, initiating and conducting case and outbreak investigations of zoonotic diseases.
6. Recognize applicable regulations and laws governing zoonotic diseases and the agencies with authority to enforce these laws.
7. Prepare summaries, reports and presentations covering important Veterinary Public Health related topics to different target audiences.

## Grading

The grade points will be distributed across four exams, which will be based on the course lectures (40.5 hrs.), class participation/attendance (3%) and final assignment (3%). Final course grades will be composed as follows:

|  |  |  |  |
| --- | --- | --- | --- |
| **COMPONENT** | **HOURS** | **DISTRIBUTION** | **ASSESSMENT TYPE** |
| Exam 1 | 7.5 | 19% | Type 1\*1 |
| Exam 2 | 10 | 25% | Type 1 |
| Exam 3 | 11 | 25% | Type 1 |
| Exam 4 | 12 | 25% | Type 1 |
| Participation/Attendance |  | 3% | -- |
| Final Assignment |  | 3% | Type 5\*2 |

\*1 Type 1: This is an examination to be administered in class, taken individually with no notes, resources, or collaboration.

\*2 Type 5: This is a graded out-of-class, open-resource, written paper which should be done individually.

The following grading scheme will be used: 93 - 100 (A), 90 - 92.9 (A-), 87 - 89.9 (B+), 83 - 86.9 (B), 80 - 82.9 (B-), 77 - 79.9 (C+), 73 - 76.9 (C), 70 - 72.9 (C-), 67 - 69.9 (D+), 60 - 66.9 (D), Below 60 (E)

## Exams

The written exams are closed book (Type I) and will be given in class. They will be a combination of multiple choice, fill-in-the-blank, matching questions, and role/situational-based applied essay questions. In the event of a planned absence the day of the exam, the student should notify the course coordinator at least 24 hours in advance. If the student has an unplanned absence the day of the exam, he/she must contact the course coordinator as soon as possible. The decision on whether or not an exam may be made up will be on a case-by-case basis, and the student will make arrangements with the course coordinator after the justification for the absence is approved.

## Assignment

Students will be assigned a final credit homework where a zoonotic disease will be provided to each individual. The student will then be responsible for researching and reporting the diagnostic techniques and process for submitting a sample specific for such disease in both humans and animals. Instructions on the final assignment would be provided at a later time on CARMEN and in class.

## Mandatory Textbooks

There is no required textbook for this course. The instructor will assign readings through CARMEN. Therefore, all relevant materials will be posted on the CARMEN web site, including the presentations handouts to be brought to class each day.

## Recommended Reading

1. Heymann, D.L. Control of Communicable Diseases Manual. 21st Edition. American Public Health Association. Washington, D.C. 2022.
2. CDC Yellow Book: Health Information for International Travel. Centers for Disease Control and Prevention. Atlanta, GA. 2024. [wwwnc.cdc.gov/travel/page/yellowbook-home](https://wwwnc.cdc.gov/travel/page/yellowbook-home)

## Course technology

Technology support

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at [ocio.osu.edu/help/hours](https://ocio.osu.edu/help/hours), and support for urgent issues is available 24/7.

* **Self-Service and Chat support:** [ocio.osu.edu/help](http://ocio.osu.edu/help)
* **Phone:**614-688-4357(HELP)
* **Email:** servicedesk@osu.edu
* **TDD:** 614-688-8743

Technology skills needed for this course

* Basic computer and web-browsing skills
* Navigating Carmen ([go.osu.edu/canvasstudent](http://go.osu.edu/canvasstudent))

Required equipment

* Computer: current Mac (MacOs) or PC (Windows 10) with high-speed internet connection
* Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication

Required software

* Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Full instructions for downloading and installation can be found at [go.osu.edu/office365help](http://go.osu.edu/office365help).

Carmen access

* You will need to use BuckeyePass ([buckeyepass.osu.edu](http://buckeyepass.osu.edu/)) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:
* Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device help article for step-by-step instructions ([go.osu.edu/add-device](http://go.osu.edu/add-device)).
* Keep your smartphone with you in order to receive a passcode via text message. From the BuckeyePass login page, click “Send a new passcode” to receive a one-time authentication code.
* Download the Duo Mobile application ([go.osu.edu/install-duo](http://go.osu.edu/install-duo)) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357(HELP) and IT support staff will work out a solution with you.

# **CLASS POLICIES & RESOURCES**

## Electronic Device Policy

As a courtesy to others, the use of mobile devices such as cell phones 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 they 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.

## Absences and Make-Up Policy

* Let the instructor know 24 hours before an absence.
* If an unexpected absence occurs, let the instructor know within 48 hrs. in order to justify the absence.
* If 25% or more of class is 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 as early as possible.

## Remote Attendance

Students are expected to attend class in person unless they have discussed their need to attend remotely with the instructor in advance. Guidelines and expectations for students who need to attend class or take exams remotely are included in Appendix 1.

## Health and Safety Requirements

All students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (<https://safeandhealthy.osu.edu>), which includes following university mask policies and maintaining a safe physical distance at all times. Non-compliance will be warned first and disciplinary actions will be taken for repeated offenses.

## 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 (<https://oaa.osu.edu/academic-integrity-and-misconduct>). 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/aGCUl5> 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.

For further information, students should refer to the College’s Student Handbook and The Ohio State University Code of Student Conduct (<https://trustees.osu.edu/bylaws-and-rules/code>). 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/provost/policies-procedures/academic-integrity/cardinal-rules.html](https://www.northwestern.edu/provost/policies-procedures/academic-integrity/cardinal-rules.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.

## 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.

## 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](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 or the general Student Life Disability Services email slds@osu.edu) any situation or circumstance that may prevent him/her from acquiring and demonstrating the full range of required skills.

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|  | Course Schedule Fall 2023VETPREV 7721 – *Epidemiology of Zoonoses and Diseases Common to Animals and Humans*Monday 4:00-4:50pm and Wednesday 4:00-5:50pm3 Semester Credits | College of Public Health College of Veterinary MedicineMaster of Public Health-Veterinary Public Health Specialization |



| **Week****No.** | **Dates** | **Topics** | **Aligned Course****Learning****Objective(s)** | **Aligned****VPH Specialization****Competencies** | **Instructor** | **Contact** | **Lect. hours** | **Student Evaluation****Activity for Assessment** | **Readings/****Other Assignments** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | 8/23/23 | **Introduction to VPH 7721** | - | - | Dr. Hoet | Hoet.1 | .5 | N/A | \*1 = If needed, it will be provided by the instructor(s) |
| **Basic Concepts: Pathogens**  | 1 | 1, 2, 4 | Dr. Hoet | Hoet.1 | .5 | Exam 1 |
| **General Concepts: Infectious Diseases**  | 1 | 1, 2, 4 | 1 | Exam 1 |
| 2 | 8/28/23 | **Zoonotic Disease Concepts I: Definition and Classification of Zoonoses (Part 1)** | 1 | 1, 2, 4 | Dr. Hoet | Hoet.1 | 1 | Exam 1 |
| 8/30/23 | **Zoonotic Disease Concepts II:** **Definition and Classification of Zoonoses (Part 2)** | 1 | 1, 2, 4 | Dr. Hoet | Hoet.1 | 1 | Exam 1 |
| **Zoonotic Disease Concepts III: Diagnostic Techniques** | 1 | 1, 2, 4 | Dr. Hoet | Hoet.1 | 1 | Exam 1 |
| 3 | 9/4/23 | **Labor Day (No Class)** |
| 9/6/23 | **Regulatory Agencies and Zoonotic Disease**  | 1 | 1, 2, 3, 7 | Dr. Hoet  | Hoet.1 | 1 | Exam 1+ Final Assignment | \*1 |
| **Risk Factors for Zoonotic Disease Emergence** | 1 | 1, 2, 6 | Dr. Hoet | Hoet.1 | 1 | Exam 1 | \*1 |
| 4 | 9/11/23 | **Basic Concepts: Outbreak Investigation** | 1 | 1, 2, 3, 7 | Dr. Hoet | Hoet.1/ Janovyak.2  | 1 | Exam 1 | \*1 |
| 9/13/23 | **Zoonotic Influenza (Livestock & Poultry)** | 1, 2 | 1, 2, 3, 4 | Dr. Nolting | nolting.4 | 2 | Exam 2 | \*1 |
| 5 | 9/18/23 | **1st Exam** | Dr. Hoet | Hoet.1 | 1 | **Basic to Risk Factors (7.5 hrs.)** |
| 9/20/23 | **Brucellosis (Livestock)** | 1, 2 | 1, 2, 3, 4 | Dr. Hoet | Hoet.1 | 1 | Exam 2 | \*1 |
| **Zoonotic Tuberculosis (Livestock)** | 1, 2 | 1, 2, 3, 4 | Dr. Hoet | Hoet.1 | 1 | Exam 2 | \*1 |
| 6 | 9/25/23 | **Anthrax (Livestock)** | 1, 2 | 1, 2, 3, 4 | Dr. Bercaw | leeza.bercaw@usda.gov | 1 | Exam 2 | \*1 |
| 9/27/23 | **Chagas and Leishmaniasis (Vector-Borne Parasitic Diseases)** | 1 | 1, 2, 3, 4 | Maj. Seal | lauren.m.seal2.mil@mail.mil | 1 | Exam 2 | \*1 |
| **Q fever (Livestock )**  | 1, 2 | 1, 2, 3, 4 | Dr. Berrian | Berrian.4 | 1 | Exam 2 | \*1 |
| 7 | 10/2/23 | **Hantavirus (Rodents)**  | 1, 2 | 1, 2, 3, 4 | Dr. Eleftheriou |  Eleftheriou.3  | 1 | Exam 2 | \*1 |
| 10/4/23 | **Tularemia (Rodents)**  | 1, 2 | 1, 2, 3, 4 | Dr Janovyak | Janovyak.2 | 1 | Exam 2 | \*1 |
| **Arenaviruses (Rodents)**  | 1, 2 | 1, 2, 3, 4 | Dr. Overcast | overcast.3 | 1 | Exam 2 | \*1 |
| 8 | 10/9/23 | **2nd Exam** | Dr. Hoet | Hoet.1 | 1 | Influenza & Arenavirus (10 hrs.) |
| 10/11/23 | **Lyme Disease (Vector-Borne)** | 1, 2 | 1, 2, 3, 4 | Dr. Pesapane | Pesapane.1 | 1 | Exam 3 | \*1 |
| **Other Tick-Borne Diseases (Vector-Borne)**  | 1, 2 | 1, 2, 3, 4 | Dr. Pesapane | Pesapane.1 | 1 | Exam 3 | \*1 |
| 9 | 10/16/23 | **Plague (Vector-Borne)** | 1, 2 | 1, 2, 3, 4 | Dr. Wittum | Wittum.1 | 1 | Exam 3 | \*1 |
| 10/18/23 | **West Nile Virus (Vector-Borne)** | 1, 2 | 1, 2, 3, 4 | Dr. Margrey | sara.margrey@odh.ohio.gov  | 1 | Exam 3 | \*1 |
| **Arboviral Encephalitides**  | 1, 2 | 1, 2, 3, 4 | Dr. Hoet | Hoet.1 | 1 | Exam 3 | \*1 |
| 10 | 10/23/23 | **Zoonotic Diseases in Small Animals** | 1, 2 | 1, 2, 3, 4 | Dr. Stull | Stull.82 |  | Exam 3 | \*1 |
| 10/25/23 | **Surveillance of Arthropod-borne Diseases & Mosquito Control** | 1, 2 | 1, 2, 3, 4 | Ms. Garrett | Leeanne.Garrett@odh.ohio.gov | 2 | Exam 3 | \*1 |
| 11 | 10/30/23 | **Leptospirosis (Livestock, Rodents, Small Animal)**  | 1, 2 | 1, 2, 3, 4 | Dr. Janovyak | Janovyak.2 | 1 | Exam 3 | \*1 |
| 11/1/23 | **MRSA (Small Animal)** | 1, 2 | 1, 2, 3, 4 | Dr. Hoet | Hoet.1 | 2 | Exam 3 | \*1 |
| 12 | 11/6/23 | **3rd Exam** | Dr. Hoet/Dr Janovyak | Hoet.1/Janovyak.2 | 1 | **Lyme & MRSA (11 hrs.)** |
| 11/8/23 | **Salmonellosis, Cat Scratch Fever, & Toxocariasis (Small Animal)** | 1, 2 | 1, 2, 3, 4 | Dr. O’Quin | oquin.4 | 1 | Exam 4 | \*1 |
| **Zoonotic Mycoses (Small Animal)** | 1, 2 | 1, 2, 3, 4 | Dr. O’Quin | oquin.4 | 1 | Exam 4 | \*1 |
| 13 | 11/13/23 | **Toxoplasmosis (Small Animal)** | 1, 2 | 1, 2, 3, 4 | Dr. Berrian | Berrian.4 | 1 | Exam 4 | \*1 |
| 11/15/23 | **Rabies: Etiologic Agent & Disease**  | 1, 2 | 1, 2, 3, 4 | Dr. Hoet/ | Hoet.1 | 1 | Exam 4 | \*1 |
| **Rabies: Prevention & Control** | 1, 2 | 1, 2, 3, 4 | Dr. Margrey | sara.margrey@odh.ohio.gov  | 1 | Exam 4 | \*1 |
| 14 | 11/20/23 | **Zoonotic Coronaviruses**  | 1, 2 | 1, 2, 3, 4 | Dr. Hoet | hoet.1 | 1 | Exam 4 | \*1 |
| 11/22/23 | **Thanksgiving (No Class)** |
| 15 | 11/27/23 | **Zoonosis in Lab Animal Populations** | 1 | 1, 2, 3, 4 | Dr. Meeker | meeker.79 | 1 | Exam 4 | \*1 |
| 11/29/23 | **Emerging Diseases in Wild Animal Populations** | 1 | 1, 2, 3, 4 | Dr. Dennis | dennis.129 | 2 | Exam 4 | \*1 |
| 16 | 12/4/23 | **Hot Topic: Tour of the ODA-ADDL** | 1, 2 | 1, 2, 3, 4 | Dr. Janovyak | Janovyak.2 | 1 | Exam 4 | \*1 |
| 12/6/23 | **Zoonotic Scenarios** | 1 | 1, 2, 3, 4, 6, 7 | Dr. Hoet/Dr Janovyak | Hoet.1/Janovyak.2 | 2 | Exam 4 | \*1 |
| 17 | 12/11/23 | **4th Exam** | Dr. Hoet | Hoet.1 | 1 | **Salmonella & Scenarios (12 hrs.)** |

# APPENDIX 1: Remote Participation

## Introduction

The expectation is that students will attend classes in person if possible, and students must request permission from the instructor in advance if they wish to attend virtually. Reasons to attend virtually might include an underlying health condition that makes it unsafe for you to attend in person, a diagnosis of COVID-19 or quarantine order from a state or university official, or residence in another state/country. Students who have obtained prior permission to attend class virtually will be provided with a Zoom link for each session.

## Expectations

Attendance:

Credit for attendance will based on your online presence and participation in classes. Students are expected to login on-time to each class and remain online until the end of the live session. The link to the class will be open at least 5 minutes before the class. During the live session, it is expected that you will keep your video camera on with the microphone muted, unless addressed to discuss, ask, or answer questions. Also, apply good practices in regard to the video conferencing; please avoid distracting backdrops or background noise, avoid external interruptions, use proper lighting, wear appropriate clothing for a virtual meeting, etc. If you have a situation that might cause you to miss a class(es), discuss it with the Team leader as soon as possible.

Participation:
As part of your participation, each week you are expected to post or ask at least one substantive question, provide a comment/opinion, and/or share an experience during one of the Monday or Wednesday sessions as part of the class.

## Examinations

Remote exams will occur concurrently with in-person exams, unless otherwise arranged. The exam will be posted to CARMEN and must be accessed using the Lockdown Browser for added security. We will provide detailed instructions and an opportunity to test the browser several days before the exam. The exams will be submitted electronically to the instructors through CARMEN. The exams will consist of a combination of multiple choice, fill-in-the-blank, matching, short essays, and problem-solving questions that will be answered online. Therefore, it is highly recommended that the students use a computer with the proper set up (i.e. keyboard) to take the exam. We strongly advise against using iPads or tablets to take the exam.

Video proctoring is mandatory while you are taking the exam. Since the Lockdown Browser does not allow you to access other applications (including the camera) while it is activated, you will need to have a second device with Zoom and video capabilities (such as a cell phone or a tablet) available during the exam. The expectation is that you will have the camera active and transmitting live during the full period of the exam, with your microphone muted unless you have a question. You should plan to take the exam in a quiet place with good lighting and a stable internet connection, and no one else should be present in the room with you while you are taking the exam. Unacceptable locations include: libraries (unless in a private study area), student lounges, coffee shops, veterinary hospitals, or any other common areas.

## Technology Requirements

In addition to the basic technology requirements listed in the body of the syllabus, students attending remotely will require access to:

* CarmenZoom virtual meetings ([go.osu.edu/zoom-meetings](http://go.osu.edu/zoom-meetings))
* Webcam: built-in or external webcam, fully installed and tested
* Microphone: built-in laptop or tablet mic or external microphone
* Mobile device with Zoom video capability to allow video proctoring when Lockdown Browser is in use for exams