

**University of Florida**  
**College of Public Health & Health Professions Syllabus**  
**PHC 6517 Public Health Concepts in Infectious Diseases (3 credit hours)**

Fall 2023

Wednesday | Period 3 – 5 HPNP G-301A

(9:35 AM - 12:35 PM)

Course Website or E-Learning available on [Canvas](#)

Instructor Name: Volker Mai, PhD, MPH, Associate Professor of Epidemiology

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Office Hours: By Appointment

Preferred Course Communications: Email via E-learning,

## **PURPOSE AND OUTCOME(S)**

### **Course Overview**

This course is intended to ensure that students: a) understand the various epidemiological research methods used to obtain evidence regarding infectious disease transmission dynamics and health outcomes; b) can interpret the existing evidence needed to make public health or policy recommendations; and c) are able to propose research strategies to obtain evidence needed to improve public health outcomes related to infectious diseases. Topic areas will include key infectious disease conditions that are relevant in the early 21st century, with additional focus on specific infections that are problematic during the year the course is offered. Students will use the knowledge and skills gained in the course to design an original research study that addresses an important question related to infectious diseases.

### **Relation to Program Outcomes**

The purpose of this course is to provide students with skills required to analyze topics in infectious disease epidemiology and develop projects targeting emerging concerns.

### **Course Objectives and/or Goals**

- 1) Identify and describe current public health issues related to the most important infectious diseases in the United States and other countries in the world.
  - a. Use data from different resources to obtain information regarding the epidemiology of the infectious diseases covered in this class.
  - b. State relevant facts related to several of the most pressing infectious disease topics either assigned by the instructor or picked by students themselves.
  - c. Interpret epidemiological data presented with tables and graphs, from websites, technical reports, and research papers that describe infectious diseases.
  - d. Describe factors that influence variations in health outcomes of specific infectious diseases across diverse populations.
- 2) Describe strategies to reduce the transmission of infectious diseases.
  - a. Identify specific factors that are associated with infectious diseases transmission, including characteristics of the pathogen, the human host, other animals and vectors, and the environment.

- b. Understand the SIR model and reproductive rate equation in infectious disease epidemiology, and describe the use of the equation in public health intervention strategies to curb the epidemic of an infectious disease.
  - c. Explain specific prevention strategies to prevent infectious disease transmission, including social, technical and biological social factors vaccines.
- 3) Understand the strengths and identify the weaknesses of published epidemiologic research studies as they apply to infectious disease epidemiology.
  - a. Discuss the strengths and limitations of specific research study designs used to obtain evidence in infectious disease epidemiology.
  - b. Describe strengths and limitations in our ability to measure the impact of infectious diseases in human populations, including measurement of infection (e.g. diagnosis) and health outcomes and behaviors.
  - c. Explain how various research tools, such as genetic sequencing of pathogens, and mathematical models, can be used to inform knowledge about infectious disease transmission and prevention.
- 4) Design and critique research studies to answer research questions related to a specific infectious disease.
  - a. Conceive and construct research questions that include study population, predictors, and outcomes from existing literature, your own research study, or a hypothetical scenario.
  - b. Design an original research study and present it both in written document and through oral presentation in class.

### **Instructional Methods**

The class will utilize interactive and didactic teaching styles. Some class assignments will have a “mock” aspect. The “mock” aspect will provide students an opportunity to participate both as a presenter and a reviewer. This will involve both critiquing and having work critiqued. The work to be critiqued will be examined by both the instructor(s) and the student reviewer. Please submit your assignments before the class period through the e-learning course website. The feedback will be graded, as will your revised version of each assignment.

This interactive style of learning demands that each participant actively prepares for class participation, and commits to the peer review process, an essential element of academic and scholarly life. Students are expected to take the review process seriously as it an important learning objective of this class.

**DESCRIPTION OF COURSE CONTENT (To be adjusted to address students' needs)****Topical Outline/Course Schedule**

Week	Date(s)	Topic(s)	Reading Assignments
1	08/23	1. Introductions 2. Course materials	None
2	08/30	ID Epidemiology history	Chapter 1
3	09/06	Classification, surveillance and trends	Chapter 2
4	09/13	Study designs	Chapter 3
5	09/29	Prevention, tools and strategies	Chapter 4
6	10/04	Outbreaks investigations	Chapter 5
7	10/11	ID Dynamics	Chapter 6
8	10/18	GIS and Molecular Epi tools	Chapter 7, 9
9	10/25	Microbiology of pathogens	Chapter 8
10	11/01	Immune system and vaccines	Chapters 10-11
11	11/08	Nutrition and Infection	Chapter 12
12	11/15	Healthcare associated ID, antibiotic resistance	Chapter 14
13	11/29	Students will present 4-6 slides (max 10 min) to summarize their term project, followed by brief discussion and scoring	
14	12/06	Students will present 4-6 slides (max 10 min) to summarize their term project, followed by brief discussion and scoring.	
	TBD	FINAL EXAM	
<i>All reading assignments are to be completed prior to class the week. Students should be prepared to discuss all assignments in class.</i>			

**Course Materials and Technology**

Textbook (Required): Infectious Disease Epidemiology Theory and Practice, 3rd edition (2014). By Kenrad E. Nelson and Carolyn F. Masters Williams.

Journal articles: either PDF or hyperlink, provided by the instructor.

Most required resources will be available via download; links will be provided.

For technical support for this class, please contact the UF Help Desk at:

- [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu)
- (352) 392-HELP - select option 2
- <https://helpdesk.ufl.edu/>

**Additional Academic Resources**

[Career Connections Center](#): Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

[Library Support](#): Various ways to receive assistance with respect to using the libraries or finding resources.

[Teaching Center](#): Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring.

[Writing Studio](#): 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more information](#).

On-Line Students Complaints: [View the Distance Learning Student Complaint Process](#).

## ACADEMIC REQUIREMENTS AND GRADING

Time commitment. The class will meet once a week on Wednesdays. Overall, approximately 1/3 will be used for lecture to review the main topics, including a selected infectious disease, research questions, methods to address the questions, and result interpretation; 1/3 of the time will be used for student-led discussion of research articles or existing data; and 1/3 will include presentations by guest lecturers, in person or online, who will discuss their research activity for specific infectious disease topics.

For this 3-credit graduate course, students are expected to spend approximately 6-9 hours per week outside of class reviewing core information about the infectious disease topic of the week, preparing for the discussion, and working towards their final research project.

The preliminary class schedule of topics is available but will be updated during the semester if change is necessary.

**Class assignments including scientific article review: 30%** of grade. Each student will present at least one journal article during the semester and participate in all other class discussions. For article review, students will identify specific infectious disease topics to present on. At least two weeks prior to the presentation date, the student will get approval from instructor for the topic, perform a literature search for articles related to the topic and choose 1-2 articles they would like to discuss. Students must submit their article selections to the instructor for approval at least one week prior to their scheduled presentation, so that the assigned article can be distributed to the class one week prior to the day of discussion. On the presentation day, the student will have approximately 30 minutes to present the review with 15-20 minutes for discussion, questions and answers. The presenting student should be sure to address:

1. Provide background information of the selected disease (include description of pathogen)!
2. What is the specific research question, and why is its significance?
3. What was known and unknown before the study?
4. What is the study design, and why was that design used?
5. Who was the population and how was a sample of the population identified?
6. What was the major outcome and how was it measured?

7. If you are the person who investigated the same problem, what would be your approach?

Each student will present and lead classroom discussion on their journal review topic. At the end of presentation, all students will give a score to the presenting student. The mean of the scores will be considered for grades.

Other class assignments will center around reading assignments, students' term project topics and guest lectures.

**Peer review of classmates' research term paper: 10%** of grade. Each student is anticipated to review two papers. Peer review will be anonymous and will be randomized through canvas. The instructor will assign grade to individual students (score range: 5-10) based on their quality of reviewing of the two papers from the classmates. In addition to detailed comments and critiques, each student is requested to grade the papers he/she reviewed (score range: 5-10). These scores will be combined with the score by the Instructor to estimate final grade of the research paper.

**Class participation: 10%** of grade. The class will involve a lot of discussion, questions and answers. Students are expected to participate by (1) being present a few minutes ahead of time to prepare for the class to start on time, and (2) actively speaking and discussing the topics of the day. Missing part or full class will result in 1% point off, unless specifically negotiated with the instructor for a reasonable excuse.

**Term Research paper 20%** of grade. Each student will identify a research topic around infectious disease of their own choosing, and prepare a term paper outlining the rationale and the study design for a research study that is designed to answer a specific research question. The term paper will have several deadlines for completion of benchmarks during the semester, including the submission of a draft for peer review, peer review of other students' papers, and revision and finalization of your own term paper. The scores from peer review and instructor's review will be used for final grade of the research paper.

**Final presentation 10%** of grade: All students will present their own research to the class. The presentation will cover the contents of their own research papers. The presentation for each student will last for approximately 10 minutes, excluding 5 min for questions and answers. All students will score the presentation in a mock review format.

**Final exam 20%** of grade. This course emphasizes student active participation and intensive practice to gain understanding of the key concepts, principles, data and methods as they are related to research, control and prevention of infectious diseases. The final exam will test your ability to put topics into context and apply principles of infectious disease epidemiology.

*To provide a highly interactive learning environment, all assignments might be shared with the class for open discussion and critique. All assignments should be submitted via the course website portal. Include your name and date and draft number on every submission. During the final class we will hold a Mock Review session to assist students in understanding the process and content of evaluating research projects. Participation grade will include your contributions to the discussions. Instructors assume all announcements are read by students.*

Percentage Earned	Letter Grade
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
63-66	D
60-62	D-
Below 60	E

Please be aware that a C- is not an acceptable grade for graduate students. The GPA for graduate students must be 3.0 based on 5000 level courses and above to graduate. A grade of C counts toward a graduate degree only if based on credits in courses numbered 5000 or higher that have been earned with a B+ or higher.

Letter Grade	Grade Points
A	4.0
A-	3.67
B+	3.33
B	3.0
B-	2.67
C+	2.33
C	2.0
C-	1.67
D+	1.33
D	1.0
D-	0.67
E	0.0
WF	0.0
I	0.0
NG	0.0
S-U	0.0

More information on UF grading policy may be found at:

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>

### **Policy Related to Class Attendance and Make-up Work**

This is an interactive class and students are expected to be present and to participate in all class sessions. Students who know they will need to miss a class session or need an assignment extension should discuss this with an instructor prior to the date of the missed class. Approval will be determined on a case-by-case basis.

Please note: Any requests for make-ups due to technical issues must be accompanied by the UF Computing help desk (<http://helpdesk.ufl.edu/>) correspondence. You must e-mail an instructor within 24 hours of the technical difficulty if you wish to request an extension.

## **STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT**

### **Expectations Regarding Course Behavior**

As a classroom of scholars, the instructors will treat students with respect and expects respect in return. The classroom climate will be supportive, encouraging and open. To this end, no one should be taking calls or texts or using their laptops for other purposes than taking notes while the class is in session, except in the case of emergency. Electronic items must be turned off if they appear to detract from classroom discussion and attention. Please listen attentively; participation is required. When opinions differ, please listen first, and then prepare to comment. If you feel you have been treated disrespectfully by any member of the scholastic community involved in this course, please bring this to the instructor's attention privately for remediation.

### **Communication Guidelines**

Instructors expect students be professional in all communications including online forums and email (e.g., using full sentences, correct spelling, descriptive subject lines). Please use clear and concise language when writing or posting. Be respectful in what you share and how you share it (e.g., avoid using all CAPS when communicating as this can look like you are yelling). When giving feedback to others, consider how you would like to hear similar constructive feedback. While in a Zoom class meeting, please make sure to use mute if you are in a noisy area or when you are not speaking.

### **Academic Integrity**

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

**“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

**“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”**

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>  
<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

### **Recording Within the Course:**

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

### **Policy Related to Guests Attending Class:**

Only registered students are permitted to attend class. However, we recognize that students who are caretakers may face occasional unexpected challenges creating attendance barriers. Therefore, by exception, a department chair or his or her designee (e.g., instructors) may grant a student permission to bring a guest(s) for a total of two class sessions per semester. This is two sessions total across all courses. No further extensions will be granted. Please note that guests are **not** permitted to attend either cadaver or wet labs. Students are responsible for course material regardless of attendance. For additional information, please review the Classroom Guests of Students policy in its entirety. Link to full policy: <https://phhp.ufl.edu/policy-classroom-guests-of-students/>

### **Online Faculty Course Evaluation Process**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## **SUPPORT SERVICES**



### **Accommodations for Students with Disabilities**

If you require classroom accommodation because of a disability, it is strongly recommended you register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class or as soon as you believe you might be eligible for accommodations. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to me as the instructor of the course to receive accommodations. Please do this as soon as possible after you receive the letter. Students with disabilities should follow this procedure as early as possible in the semester. The College is committed to providing reasonable accommodations to assist students in their coursework.

### **Counseling and Student Health**

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The **Counseling and Wellness Center** 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- **U Matter We Care** website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The **Student Health Care Center** at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from: Alachua County Crisis Center: (352) 264-6789  
<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>
- **University Police Department:** [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).
- **UF Health Shands Emergency Room / Trauma Center:** For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website.](#)

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

### **Inclusive Learning Environment**

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the

understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida's Non-Discrimination Policy, which reads, "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: [www.multicultural.ufl.edu](http://www.multicultural.ufl.edu)