

## **PHC 4024 Applied epidemiology (3 credit hours)**

Fall: 2020 Thursday | Period 5 - 7 (11:45 AM - 2:45 PM)

Delivery Format: Online, interactive zoom meetings

Join URL: <https://ufl.zoom.us/j/91037945756>

E-Learning: <http://lss.at.ufl.edu>

Instructor Name: Volker Mai, PHD, MPH

Room Number: Emerging Pathogens Institute, room 373

Phone Number: 352-272-9398

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Office Hours: virtual, request via e-mail

Teaching Assistants: TBA

Preferred Course Communications: e-mail via e-learning platform

**Prerequisites** *HSC 3057, HSC 3502, HSC 4558, PHC 4101, and Health Science and Public Health majors/minors only.*

### **Purpose and Outcome**

#### **Course Overview**

The course is an introduction to Epidemiology with an emphasis on its practical application for students in the Bachelor of Public Health and Health Science programs. This course will introduce fundamental epidemiological concepts and apply them to demonstrate their utility in improving various aspects of public health. Problems discussed will be based on historical advances in the field of epidemiology and cover a broad range of timely public health issues including outbreak investigations, risks associated with lifestyles choices, water safety, rural health, school health, and mental health. The student will gain knowledge through online lectures, case-based studies, software training, readings, field trips (virtual or as conditions permit), and exercises. The student will get to experience firsthand how Epidemiology is applied and what opportunities await epidemiologists interested in improving public health.

#### **Relation to Program Outcomes**

1. Introduce approaches to determine disease etiology
2. Identify population health needs and develop concepts to address them
3. Introduce the role and importance of data collection and analysis in public health
4. Introduce approaches and interventions to address population concerns
5. Utilize various electronic technology and bioinformatics approaches to communicate data

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

1. Appraise the value of public health interventions aimed at improving population health in relation to their impact on individual health outcomes given a case study (Analysis)
  - 1.1. Predict the impact of a public health intervention on improving population health and individual health outcomes given a scenario (Application)
  - 1.2. Summarize the relationship between population health and individual health outcomes (Comprehension)
  - 1.3. Define health at the individual and population levels (Knowledge)
2. Analyze the distribution of morbidity, mortality, and risk factors in terms of magnitude, time, place, and population (Analysis)
3. Calculate and interpret epidemiological measurements used to describe disease occurrences (Application)
  - 3.1. Use information technology tools and statistical programming packages to analyze public health data from an epidemiological standpoint (Application)
  - 3.2. Identify key sources of data for epidemiologic purposes (Comprehension)
  - 3.3. State fundamental epidemiological concepts (Knowledge)
4. Compare and contrast correlation and causality (Analysis)
  - 4.1. Interpret the methods, results, and discussion of scholarly literature in terms of epidemiologic study design used (Application)
  - 4.2. Explain the correct uses and applications for both descriptive and analytic epidemiology (Comprehension)
  - 4.3. Define descriptive and analytic epidemiology (Knowledge)
5. Apply basic principles of public health surveillance in the practice of public health given a scenario (Application)
  - 5.1. Discuss how local health agencies collect and use surveillance data to develop health interventions and policies (Comprehension)
  - 5.2. Define surveillance in terms of public health and epidemiologic study (Knowledge)
  - 5.3. Identify epidemiological applications used by local health agencies (Knowledge)
6. Apply outbreak investigation techniques (Application)
  - 6.1. Explain principles of infectious diseases surveillance (Comprehension)
  - 6.2. Identify outbreaks from a surveillance context (Knowledge)
  - 6.3. Define outbreak, epidemic and pandemic (Knowledge)
7. Recognize special epidemiological applications: Examples include: Molecular and Genetic Epi, Environmental Epi, Occupational Health, Unintentional Injuries, College Student health, Social and Behavioral Epi, and Cancer Epi (Knowledge)

## **Instructional Methods**

### **Blended Learning**

*What is blended learning and why is it important?*

A Blended Learning class uses a mixture of technology and face-to-face instruction, in our case zoom based, to help you maximize your learning. Knowledge content that, as the instructor, I would have traditionally presented during a live class lecture is instead provided online before the live class takes place. This lets me focus my face-to-face teaching on course activities designed to help you strengthen higher order thinking skills such as critical thinking, problem solving, and collaboration. Competency in these skills is critical for today's health professional.

*What is expected of you?*

You are expected to actively engage in the course throughout the semester. You must come to class prepared by completing all out-of-class assignments. This preparation gives you the knowledge or practice needed to engage in higher levels of learning during the live class sessions. If you are not prepared for the face-to-face sessions, you may struggle to keep pace with the activities occurring in the live sessions, and it is unlikely that you will reach the higher learning goals of the course. Similarly, you are expected to actively participate in the live class. Your participation fosters a rich course experience for you and your peers that facilitates overall mastery of the course objectives.

## **Description of Course Content**

### **Topical Outline/Course Schedule**

Week	Date(s)	Topic(s)	Readings
1	09/03	Introduction to epidemiology	Chapter 1
2	09/10	Health and disease measures	Chapter 2
3	09/17	Study designs	Chapter 3
4	09/24	Data analysis and presentation	Chapter 4
5	10/01	Causation vs. correlation	Chapter 5
6	10/08	EXAM 1	
7	10/15	Prevention for non-communicable disease	Chapter 6
8	10/22	Surveillance for communicable disease	Chapter 7
9	10/29	Hospital based epidemiology	Chapter 8
10	11/05	Environmental and occupational epidemiology	Chapter 9
11	11/12	Applying epidemiology to health policy	Chapter 10
12	11/19	EXAM 2	
13	11/26	THANKSGIVING (no class)	
14	12/03	Term project presentations (groups)	Chapter 11
15	12/16	FINAL exam (12:30-2:30)	

### **Course Materials and Technology**

Textbook: Basic epidemiology / R. Bonita, R. Beaglehole, T. Kjellström. 2nd edition (free online)

E-Learning: <http://lss.at.ufl.edu>

ZOOM: <https://ufl.zoom.us/j/91037945756>

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

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

## Academic Requirements and Grading

Requirement	Due date	Points or % of final grade (% must sum to 100%)
Assignments	Weekly	20%
Exam 1	10/08	20%
Exam 2	11/19	20%
Term project	12/03	10%
Participation	Weekly	10%
Final exam	12/16/2020 @ 12:30 PM - 2:30 PM	20%

Point system used (i.e., how do course points translate into letter grades).

### Example:

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. In addition, the Bachelor of Health Science and Bachelor of Public Health Programs do not use C- grades.

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>

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

## Exam Policy

### Policy Related to Make up Exams or Other Work

**There will be no make-up exams. If you have to miss an exam, and inform the instructor before the exam or provide a valid excuse, you will be allowed to drop the exam and instead combine the score of the remaining two exams to 60% of your grade.**

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 me within 24 hours of the technical difficulty if you wish to request a make-up.

### Policy Related to Required Class Attendance

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Excused absences must be consistent with university policies in the Graduate Catalog (<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance>). Additional information can be found here: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

## Student Expectations, Roles, and Opportunities for Input

### Expectations Regarding Course Behavior

Students are expected to attend all scheduled class activities and dedicate sufficient time to complete assignments prior to each class. Active participation in lively discussions is highly encouraged, respectful disagreements are highly encouraged to explore multiple views when exploring established concepts.

### Communication Guidelines

Regular communications through the e-learning interface, including e-mails, announcements and discussion group comments will enhance the zoom class experience. Preferred communication with the instructor and TA is through the e-learning interface; rather than by direct e-mail.

### **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.

### **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/>.

### **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.

### **Online Synchronous Sessions**

Our class sessions may be audio visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to

have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voices recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials is prohibited

## **Support Services**

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

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, 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.
- You 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>

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**

**University of Florida**  
**College of Public Health & Health Professions Syllabus**

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)