

PHC 6001 Principles of Epidemiology in Public Health (3 credit hours)

Fall: 2022 Section 19654

Delivery Format: asynchronous via 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

Email Address: vmai@ufl.edu

Office Hours: virtual or in person, request via e-mail

Teaching Assistants: Aduse-Poku, Livingstone <adusepokul@ufl.edu>

Preferred Course Communications: **e-mail via e-learning platform** Prerequisites **Graduate status or approval of instructor.**

Purpose and Outcome**Course Overview**

This course is an introduction to epidemiology for students majoring in the health sciences. This course introduces the principles, concepts, and methods of the epidemiologic investigation of health-related events and processes. The purpose of this course is to equip students with a core epidemiologic toolset to explain the place of epidemiology in general health thinking and to communicate and apply the basic principles of epidemiology. Examples of the use of the principles of epidemiology will be presented so that students will have sufficient understanding to apply such principles in future health work. It is hoped that the course will allow the student to critically read and evaluate his or her own health-related work using epidemiologic principles. This course is not intended to present the epidemiologic aspects of any specific disease or class of diseases.

CEPH Foundational Knowledge Covered in this Course

The Council on Education for Public Health (CEPH) is the accrediting body for the College of Public Health & Health Professions. CEPH has outlined the Foundational Public Health Knowledge that all graduates of the college must be grounded in. As a core course for public health graduate programs in the college, this course covers the following CEPH Foundational Knowledge Content:

- **Explain public health history, philosophy and values**
- **Explain the role of quantitative and qualitative methods and sciences in describing and assessing a population's health**
- **List major causes and trends of morbidity and mortality in the U.S. or other communities relevant to the school or program**
- **Discuss the science of primary, secondary, and tertiary prevention in population health, including health promotion, screening, etc.**
- **Explain the critical importance of evidence in advancing public health knowledge**
- **Explain the effects of environmental factors on a population's health**
- **Explain biological and genetic factors that affect a population's health**

- Explain behavioral and psychological factors that affect a population's health
- Explain how globalization affects the global burdens of disease

Course Objectives and/or Goals

- **Apply epidemiological methods to settings and situations in public health practice**
- Calculate basic epidemiology measures of frequency and association
- **Select quantitative and qualitative data collection methods appropriate for a given public health context**
- **Interpret results of data analysis for public health research, policy, or practice**
- Evaluate the strengths and limitations of epidemiologic reports
- Identify common sources of error in epidemiologic research
- Explain the importance of epidemiology for informing scientific, ethical, economic, and political discussion of health issues
- Identify basic ethical and legal principles pertaining to the collection, maintenance, use, and dissemination of epidemiologic data
- **Communicate audience-appropriate public health content, both in writing and through oral presentation**

DESCRIPTION OF COURSE CONTENT

Course Materials and Technology

Required Text: Essentials of Epidemiology in Public Health, 4th Edition by Ann Aschengrau, ScD, and George Seage III, DSc. Copyright 2020, ISBN: 978-1284128352.

Completion of assigned readings from the text is mandatory. Lectures will reinforce important aspects of these reading materials, however, students are still responsible for any content from the assigned readings and exercises are NOT covered in the lecture presentations. On the rare occasion when there are discrepancies between the lecture and the textbook, you should rely on the information presented during the lectures.

Online synchronous and asynchronous learning

The course website is located in Canvas. Our classes will employ a mixture of asynchronous and synchronous instruction to help students maximize their learning. Instructional activities include online video lectures, online quizzes, web assignments, and group discussions and forums. Content that would have traditionally been presented during a live class lecture is instead provided online before the synchronous class takes place. This allows more time to focus on the higher levels of learning. The synchronous session and group work will allow the students think critically, obtain expertise, and practice critical reasoning.

What Does It Mean for Students?

Students are expected to come to class prepared by completing all out-of-class readings and video lectures. The coursework outside of class typically lays a foundation of knowledge or gives students practice needed to engage in higher levels of learning during the synchronous class sessions. During the synchronous lab session, students

practice critical skills used by health professionals – critical thinking, problem solving, collaborating, and/or applying concepts gained from the out-of-class assignments to real-world examples. **If students are not prepared for the synchronous lab sessions, they will likely struggle to reach the higher learning goals of the course.** When students come prepared, they can be active participants throughout the blended learning course experience, which will help them master course material and maintain what they have learned beyond the end of the course.

Computer resources needed

Students must have a working webcam and microphone to participate in this course. Consult the course website in the Getting Started section for other computing needs and specifications.

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

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

ACADEMIC REQUIREMENTS AND GRADING

Course Schedule: The course is organized in 12 modules, and one module will be covered each week. Weeks for this course are defined as Tuesday through Monday. Assignments, post-module quizzes, and participatory learning forum are due on Monday at 11:59 PM EST, and post-module quizzes will be available Friday–Monday at the end of examination weeks, due Monday at 11:59 PM EST. The course is designed this way to afford students the flexibility to complete coursework and examinations on weekdays or weekends. On the course site, the week’s modules will be published each Tuesday (generally by noon). The announcement and conference features will also be utilized. The content of this syllabus, particularly with regards to content activities will be adjusted based on the academic progression of the students.

Assignments

12 Post-Module Quizzes – 5% of the course grade (equal weighting for each quiz)

You will complete 12 post-module quizzes during the semester. Individual quizzes will be conducted using Canvas, ten of your quizzes will count towards your grade. These quizzes are intended to help reinforce the lecture material in each module and help you judge your understanding of the course content prior to applying that content in class. You will have a maximum of two attempts to complete the quiz and your final grade will be the highest grade of all attempts completed.

5 Participatory Learning Forums (PLF) – 5% of the course grade (equal weighting for each forum)

Following Bloom’s taxonomy (<https://teaching.uncc.edu/services-programs/teaching-guides/course-design/blooms-educational-objectives>) your group will formulate a question related to the content of the module (and provide the correct answer and detailed explanation to the question formulated. **Questions in the higher domains will receive higher scores.** Examples of questions are provided in Canvas. A successful and complete submission includes the following steps: 1. Your group will post your question in the discussion board in Canvas; and 2. Your group will submit a word document with the question formulated AND the correct answer. **Grading for this assignment will be based on the complexity and originality of the**

question generated and the accuracy in the response provided (3 points for the question formulated, 2 points for the response provided).

2 Proctored Exams –40% of the course grade (equal weighting for each exam)

Midterm Exam – Modules 1 to 5; Final Exam: Modules 6 to 11. The exam in Canvas may include any course content covered in the video lectures, assigned readings, individual and group quizzes, assignments, and participatory learning forums. The format for these exams varies, including multiple choice questions, matching questions, and short answer questions. You will need a non-programmable calculator to complete the exam. Make-up exams will not be given, except in extreme circumstances. The essay will test your knowledge and understanding of the assigned subjects.

12 Assignments – 15% of the course grade (equal weighting for each assignment)

There are 12 assignments that will be completed as homework; your highest 10 grades will count toward your grade and the lowest two grades will be dropped. Assignments are weighted equally to each other.

10 Group Quizzes – 10% of the course grade (equal weighting for each assessment)

Ten group open-book, open-note, group quizzes will be completed at every synchronous session. Each quiz is worth 10 points. Grades will be given to only those students participating in the session. Group quizzes are equally weighted to each other.

Epi Term Project – 20% of the course grade (group project)

The term project will provide you with an opportunity to apply skills acquired in this course to explore a topic relevant to epidemiology in more depth. Throughout the semester your group will progress from identifying a topic of interest to defining the scope of the project, summarizing relevant literature, and developing a study design. Your group will present the project to the class via a video presentation at the end of the semester.

Peer Evaluation – 5% of the course grade

You will actively be working in teams during the semester and your own level of preparation for the lab sessions is critical to your team's success. This will be an opportunity to evaluate your efforts and your peer's efforts.

Epi in the news – (extra credit, up to 2.5 points added to the final grade)

If you want to present Epi in the news you will submit before class to the canvas discussion thread a web link to a relevant news article. The instructor will pick 1-2 relevant submissions for presentation. You will prepared a short 3 to 5 minute video to guide a discussion on the current topic in epidemiology that has been in the news recently. Topics might include an update on COVID or Monkeypox, an important study on exposures (life-style factors, environmental exposures e.t.c.) or clinical trial result, or a policy or legal issue related to epidemiology studies. More credit will be given to Epi in the news presentations in the first half of the semester.

POLICY RELATED TO MAKE-UP EXAMINATIONS OR OTHER WORK

If you have a scheduling conflict with the date of any of the course examinations, please discuss it with Dr. Mai as soon as you are aware of the conflict. For rare and acceptable situations, arrangements may be made for an alternative time at which to take the examination. These arrangements need to be made as soon as possible in the semester but no later than two weeks prior to the scheduled examination date. Late examinations will only be permitted at the discretion of the instructor (advanced notice in writing required and per applicable University of Florida policies). For unforeseen and exceedingly-rare circumstances, taking a make-up examination after the official closing time may be permitted. Note that any requests for make-up examinations due to technical issues MUST be accompanied by the ticket number when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail Dr. Mai and Ms. Hardemon (hardemont@ufl.edu) within 24 hours of the technical difficulty if you wish to request a make-up.

To earn any credit, assignments and participatory learning forums must be submitted on time. Late submissions will not be accepted, unless emergent and other unforeseen circumstances occur based on UF policies. Students are advised to access exercise instructions early each week and plan accordingly to ensure timely submission of exercises. It is recommended that students not wait until the last day to submit exercises to account for unforeseen circumstances that may arise. Note that assignments close in Canvas at the stated date and time, and no assignment can be submitted via e-mail after the deadline for any reason

Week	Module	Online Lecture Topic	In-class activities	Readings	Assignment (deadline – every Monday at 23:59 EST) PFL due at the end of class
Aug 30th			Orientation		
Sept 6 th	1	The approach and evolution of Epidemiology	Outbreak Investigation Epi Curve activity Module 1 group quiz PLF	Syllabus Text, Chp 1 Text, Chp 5, pgs 99 - 116	1. Post-module 1 quiz 2. Module 1 Assignment
Sept 13 th	2	Measures of Frequency	Disease Frequency Module 2 group quiz Epi Term Project	Text, Chp 2	1. Post-module 2 quiz 2. Module 2 Assignment
Sept 20 th	3	Comparing Frequencies	Measures of association Module 3 group quiz PLF	Text, Chp 3	1. Post-module 3 quiz 2. Module 3 Assignment
Sept 27 th	4	Sources of Data, Disease Transmission, Descriptive Epi	Descriptive Epidemiology Module 4 group quiz Epi Term Project	Text, Chp 4 Text, Chp 5, pgs 116 - 151	1. Post-module 4 quiz 2. Module 4 Assignment
Oct 4 th	5	Screening	Screening Module 5 group quiz PFL Module 1-5 review	Text, Chp 16	1. Post-module 5 quiz 2. Module 5 Assignment
Oct 11 th			Modules 1 to 5		
Oct 18 th	6	Overview of Epi Study Designs, Experimental Studies	Experimental studies Module 6 group quiz Midterm review PLF	Text, Chp 6 Text, Chp 7	1. Post-module 6 quiz 2. Module 6 Assignment
Oct 25 th	7	Cohort Studies	Cohort studies- Module 7 group quiz Epi term Project	Text, Chp 8	1. Post-module 7 quiz 2. Module 7 Assignment
Nov 1 st	8	Case Control Studies	Case-control studies Module 8 group quiz PLF	Text, Chp 9	1. Post-module 8 quiz 2. Module 8 Assignment

Nov 8th	9	Bias & Confounding	Bias and confounding - Module 9 group quiz Epi term project	Text, Chp 10 Text, Chp 11	1. Post-module 9 quiz 2. Module 9 Assignment
Nov 15th	10	Causation & Effect modification	Effect modification Module 10 group quiz PLF	Text, Chp 12 Text, Chp 13	1. Post-module 10 quiz 2. Module 10 Assignment
Nov 22nd	11	Critical Reading of Epi Papers	Review of scientific literature assignment – Editor Epi term Project *Virtual class	Text, Chp 14	1. Post-module 11 quiz 2. Module 11 Assignment
Nov 29th	12	Ethics	Ethics Epi Term Project Presentation	Text, Chp 14	1. Post-module 12 2. Module 12 Assignment
Dec 7th	6 to 12	Modules review Final Exam	6 – 12 modules review Epi Term Project Presentation		
		Final Exam	Final Exam: week		Modules 6 to 11

GRADING

The course requirements are presented in percentages above and add up to 100% of the course grade. Final grades follow the scale in this table:

Post-Module Quizzes	Weekly	5%
Participatory Learning Forums		5%
Group quizzes		10%
Home assignments	Weekly	15%
Peer evaluations		5%
Midterm Exam	10/11	20%
Term project		20%
Final exam		20%
Epi in the News		Extra credit (up to 2.5%)

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

Percent of Course	Letter Grade	Grade Point
93% - 100%	A	4.00
90% - 92.9%	A-	3.67
87% - 89.9%	B+	3.33
83% - 86.9%	B	3.00
80% - 82.9%	B-	2.67
77% - 79.9%	C+	2.33
73% - 76.9%	C	2.00
70% - 72.9%	C-	1.67
67% - 69.9%	D+	1.33
63% - 66.9%	D	1.00
60% - 62.9%	D-	0.67
Below 60%	E	0.00

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.

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

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

Professionalism and COVID related expectations

As students pursuing a path in the health professions or public health, it is crucial to demonstrate professional behaviors that reflect integrity and commitment to the health of patients, fellow health professionals, and to populations we serve. To accomplish this, a strong responsibility for the well-being of others must be evident in our decisions, along with accountability for our actions. Professionalism in the health disciplines requires adherence to high standards of conduct that begin long before graduation. This is particularly true during times of health emergencies such as the COVID pandemic, given our professional habits can have a direct impact upon the health of persons entrusted to us.

If you are not vaccinated, get vaccinated. Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to get your shot, including options that do not require an appointment:

<https://coronavirus.ufhealth.org/vaccinations/vaccine-availability/>. Students who receive the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus.

In response to COVID-19, the following professional practices are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to protect the health and safety of ourselves, our patients, our neighbors, and our loved ones.

- You are required to wear approved face coverings at all times while in Health Science Center classrooms and within Health Science Center buildings even if you are vaccinated.
- If you are sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed

to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.

- Continue to follow healthy habits, including best practices like frequent hand washing.
- Avoid crowded places (including gatherings/parties with more than 10 people)

Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class. Hand sanitizing stations will be located in every classroom.

Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. If you are withheld from campus by the Department of Health through Screen, Test & Protect you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.

Continue to regularly visit [coronavirus.UFHealth.org](https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html) and [coronavirus.ufl.edu](https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html) for up-to-date information about COVID-19 and vaccination.

COVID-19 SYMPTOMS

See <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html> for information about COVID-19 symptoms, which may include fever, cough, shortness of breath or difficulty breathing, fatigue, chills, muscle or body aches, headache, sore throat, congestion or runny nose, nausea or vomiting, diarrhea, and loss of taste or smell.