

# PH 581: Applied Methods in Public Health Practice

## Contact Information

Instructor: Dr. Ashley Comiford

Office: virtual

Office hours: Tuesday and Wednesday, 8:00 – 9:00 a.m. or as scheduled with the instructor

Phone/texting: 918-607-6139

Email: ashley.comiford@wku.edu

## Prerequisites

Undergraduate degree, curiosity, open-mindedness, willingness to learn and participate in class.

## Required Text/Materials

Required text: The CDC Field Epidemiology Manual <https://www.cdc.gov/eis/field-epi-manual/index.html> (free, online, or may be purchased from Oxford Publishers)

Public Health Accreditation Board (PHAB) [Standards and Measures for Initial Accreditation, 2022](#),

Additional readings and materials are posted in Blackboard; Consult each weekly folder. Materials are posted before 7:00 a.m. each Monday morning.

Access to webcam/microphone to record assignment(s) and calculator for simple calculations.

We will discuss familiarity with software in the first week to determine what might be best to use for this course and reinforce other work you are doing.

## Course Description

Application of methods, tools, and techniques utilized by public health practitioners and other related professionals to identify, develop, and assess community-based programming and research.



## Course Overview

Get ready to engage in meaningful, epidemiologic problem-solving while you learn and apply field epidemiology skills. We will pull examples from public health practice as it is happening.

Based on the 2023 [Council of State and Territorial Epidemiologists \(CSTE\) Applied Epidemiology Competencies](#) (AEC) and in preparation for post-MPH fellowships or work

similar to the CSTE Applied Epidemiology Fellows program or [CDC ORISE](#) MPH-level opportunities, this course applies principles and practices of field epidemiology to build students' skill sets to interpret epidemiologic data, manage data, design data collection tools, interview case-patients, and present data the intended audience based on health need and purpose of communication. The work must be informed by the awareness of differences between groups and closing the gap between them to improve population health.

## Course Objectives

Upon successful completion of this course, students will be able to:

1. Conduct a basic communicable disease field investigation.
2. Extract meaningful epidemiologic details from scientific literature using STROBE checklists
3. Construct data visualizations and interpret them correctly
4. Write a Single Overriding Communication Objective and capture the epidemiologic methods and findings contributing to the strengths and weaknesses of the applied epidemiology work being evaluated.
5. Evaluate documentation for mock PHAB accreditation site visits of domain one (community health assessment) or 2 (Investigate, diagnose, and address health problems and hazards affecting the population).
6. Identify and build partnerships and collaborations to address emerging public health outbreaks and emergencies.
7. Discuss diverse populations, healthy equity, and how these topics affect field epidemiology investigations.

## Course Assessments

I like to make assessment fun, informative (you might learn more about yourself or others in the class), and demonstrative (are you building your skills as an applied epidemiologist?).

- **Introduction to yourself and initial self-assessment against CSTE Applied Epidemiology Competencies-20 points**  
You will introduce yourself giving a brief background and how and why you became interested in public health and epidemiology. Additionally, you will take an assessment to see where you are at regarding applied epi competencies.
- **Mock Outbreak-20 points**  
Practice applying steps of an outbreak investigation through the electronic creation of an epi-curve, calculation of appropriate epidemiologic measures, and identification of intervention steps.
- **Single Overriding Communication Objective Worksheet- 20 points**  
Students will create a SOCO worksheet to help inform the community about an emerging public health outbreak. More details will be provided on Blackboard.
- **Public Health Accreditation Board (PHAB) Mock Accreditation Review of Domain One or Two Documentation—20 points**  
Students will evaluate submitted documentation against the standards of domains 1 or 2 per student choice. Individual evaluation requires attention to detail of the documentation, note taking, determination of scoring compared to standards, and then team discussion and determination of final score. More details will be provided on Blackboard. Students will submit a review of the PHAB accreditation and we will have discussions on Blackboard for each submitted review. More details will be posted to Blackboard.

- **Exploring Data Visualizations—20 points**

Students will identify at least 2 public health data dashboards of interest to each student and video record the visualization of interest while addressing: the purpose of the visualization (e.g. show COVID-19 case counts over time in Kentucky, August – September 2023), the intended audience for the visualization (e.g. Warren county, KY residents), epidemiologic interpretation of the data (e.g. increasing trend, is it significant, among certain age, gender, race, ethnicity, or other groups), and any information about tools used to create the visualization (e.g. Tableau, National Syndromic Surveillance System or NSSP, etc). More details will be posted on Blackboard. Class members will vote on the most appealing and informative visualization after deliberation (for 5 bonus points).

- **Dirty Data—20 points**

A dataset on a topic of previous discussion will be provided for cleaning, analysis, visualization (graphs, figures), and interpretation. Use of any university-provided or free public health (e.g. EpiInfo) analytic tools is required.

- **Journal Club- 20 points**

You will be assigned 4 journal articles to review throughout the semester. There will be a short assignment associated with each journal article that will be utilized for you to summarize the findings of the journal article. There will also be an associated forum discussion about the article. Reading and discussing journal articles will enhance your ability to critically evaluate epidemiological research, evaluation, and practice. Articles will be related to the topics of the previous weeks.

- **Group Discussions- 10 points**

Each week I will post a question related to the week's topic. It is expected that you will provide one post and reply about the topic. Additional discussion is highly encouraged.

## Grading

Non-attendance for a web-based course shall be defined as failure to perform a meaningful academically-related activity (including, but not limited to, the following: submitting an academic assignment, taking an exam, participating in an online discussion about academic matters) within one week of the course start date without previous arrangements with the instructor or department.

**Points for each assessment are listed with the assessments.**

**10 bonus points** for a 500-word write-up of value to applied public health practice from attending a pre-approved community, university, or live virtual public health event lasting at least one hour. Guidelines for submission in Blackboard.

**Final exam: 50 points.** This will be an open-ended and multiple-choice questions exam. This will be an open note/open book exam. There will be limited time to complete and submit, but the time allowed should be adequate. Extensions will be made on a case-by-case basis.

Grades will be assigned as follows, based upon the total points possible of 200\$:

90.00 -- 100%	180.00 – 200.00 points	A
80.00 -- 89.99%	160.00.00 – 179.99 points	B
70.00 -- 79.99%	140.00 – 159.99 points	C
60.00 -- 69.99%	120.00 – 139.99 points	D

<60.00%

<119.99 points

F

- If actual points possible vary from those listed for assignments, and examinations, the percentages will be applied as shown to the revised point totals.

### **Regular and Substantive Interaction**

The U.S. Department of Education requires that distance education courses must include regular and substantive interaction between students and faculty. For more information about Regular and Substantive Interaction at WKU, please visit the [Regular and Substantive Interaction in Online and Distance Learning webpage](#).

In this course, regular and substantive interaction will take place in the following ways:

- Weekly asynchronous material sharing between faculty and students,
- Faculty participation in weekly discussion boards,
- Weekly announcements, postings of public health events of interest, and
- Timely and detailed feedback on assignments provided within one week of submission.

### **Academic Integrity**

Academic integrity is essential to students' intellectual development and is a core value of the MPH program. Thus, the work you do in this course – and all MPH courses -- is expected to reflect academic integrity through responsible behaviors, including avoiding plagiarism, unauthorized collaboration, cheating, or other types of [academic dishonesty](#). Students who commit any act of academic dishonesty may receive a failing grade on the assignment/assessment, or a failing grade in the course. [Per policy](#), students may also be reported to the Office of Judicial Affairs for disciplinary sanctions and/or the Graduate School for dismissal from the program. A student who believes a faculty member has dealt unfairly with him/her/them in a course involving academic dishonesty may seek relief through the [Student Complaint Procedure](#).

### **Diversity, Inclusivity, & Equity**

*We promote social justice by creating a respectful, collaborative, diverse, inclusive, and equitable environment through teaching, service, and research.*

The strength and success of WKU's MPH program is built on the foundation of a wide range of perspectives and experiences. We embrace diverse backgrounds, embodiments, and experiences and are committed to fostering inclusive and accessible environments. We respect physical, social, and cultural differences among us, which may include, but are not limited to: age, cultural background, disability, ethnicity, family status, gender identity and presentation, citizenship and immigration status, national origin, race, religious and political beliefs, sex, sexual orientation, socioeconomic status, and veteran status. Please talk with your instructor, advisor, or MPH staff member right away if you experience disrespect in this class or while part of our program. Whenever possible, we will work to address it educationally. Resources on inclusive language and document accessibility are provided in the MPH Guidebook and MPH Student organizational site on Blackboard

### **ADA Accommodations**

In compliance with University policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, Room 1074. The SARC can be reached by phone number at 270-745-5004

[270-745-3030 TTY] or via email at [sarc.connect@wku.edu](mailto:sarc.connect@wku.edu). Please do not request accommodations directly from the professor or instructor without a faculty notification letter (FNL) from The Student Accessibility Resource Center.

## Title IX/ Discrimination & Harassment

Western Kentucky University (WKU) is committed to supporting faculty, staff and students by upholding WKU's [Sex and Gender-Based Discrimination, Harassment, and Retaliation](#) (#0.070) and [Discrimination and Harassment Policy](#) (#0.2040). Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Executive Director, Office of Institutional Equity/Title IX Coordinator, Ena Demir, 270-745-6867 or Title IX Investigators, Michael Crowe, 270-745-5429 or Joshua Hayes, 270-745-5121. Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are "Responsible Employees" of the University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's [Counseling and Testing Center](#) at 270-745-3159.

## WKU's COVID Statement

All students are strongly encouraged to [get the COVID-19 vaccine](#). In accordance with WKU policy, all students must call the WKU COVID-19 Assistance Line at 270-745-2019 within 4 hours of testing positive for COVID-19 or being identified as a close contact to someone who has tested positive. The COVID Assistance Line is available to answer questions regarding any COVID-19 related issue. This guidance is subject to change based on requirements set forth by federal, state, and local public health entities. Please refer to the [Healthy on the Hill](#) website for the most current information.



## MPH Competencies

This course contributes to the development of the following competencies:

MPH COMPETENCY	Obj.
Evidence-based Approaches to Public Health	
1. Apply epidemiological methods to the breadth of settings and situations in public health practice	1, 2
2. Select quantitative and qualitative data collection methods appropriate for a given public health context	
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate	1, 3
4. Interpret results of data analysis for public health research, policy or practice	1
Public Health & Health Care Systems	
5. Compare the organization, structure and function of health systems across national and international settings	
6. Discuss the means by which structural bias, social inequities, and racism undermine health and create challenges to achieving health equity.	7
Planning & Management to Promote Health	
7. Assess population needs, assets and capacities that affect communities' health	2, 5
8. Apply awareness of cultural values and practices to the design, implementation, or critique of public health policies or programs	

MPH COMPETENCY	Obj.
9. Design a population-based policy, program, project or intervention	
10. Explain basic principles and tools of budget and resource management, specifically after funding for a project is secured	
11. Select methods to evaluate public health programs	
Policy in Public Health	
12. Discuss the policy-making process.	
13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes	6
14. Advocate for political, social or economic policies and programs that will improve health in diverse populations	7
15. Evaluate policies for their impact on public health and health equity	7
Leadership	
16. Apply leadership and/or management principles to address a relevant issue; such principles may include creating a vision, empowering others, fostering collaboration, and guiding decision making	1, 5
17. Apply negotiation and mediation skills to address organizational or community challenges	
Communication	
18. Select communication strategies for different audiences and sectors	4
19. Communicate audience-appropriate (i.e., non-academic, non-peer audience) public health content, both in writing and through oral presentation	3, 4
20. Describe the importance of cultural competence in communicating public health content	
Interprofessional and/or Intersectoral Practice	
21. Integrate perspectives from other sectors and/or professions to promote and advance population health	5, 6
Systems Thinking	
22. Apply a systems thinking tool to visually represent a public health issue in a format other than standard narrative	
WKU MPH Program Competencies	
23. Apply health behavior theories and models to address public health problems.	
24. Locate, cite, and integrate credible and/or peer-reviewed literature into professionally written products.	
25. Apply methods of field epidemiology.	1
26. Describe the impact and importance of social determinants of health.	2
27. Identify the direct and indirect population health effects of environmental hazards (biological, chemical and physical) on humans, animals and the ecology.	

### What are we going to be doing and when?

Content Focus	Assessments	Readings	When	Notes
The history of epidemiology and field epidemiology	AEC self-assessment and introduction of yourself Introduction to the epidemiology and field epidemiology	CDC Field Epi Manual Chapter 1, 18-19, 23	Aug 19-23	Due Aug 23
Conducting field investigations	We will discuss the basics of conducting field investigations	CDC Field Epi Manual	Aug 26-Aug 30	Aug 26 is last day to drop

		Chapters 2-3		classes for a full refund; Tools you can use: <a href="#">OpenEpi Menu</a>
Partnerships, stakeholders, and collaborations in epidemiology	We will discuss how applied epidemiology spans multiple jurisdictions and how this work is coordinated	CDC Field Epi Manual Chapters 13-15	Sept 2-6	Sept 2 is Labor Day
PHAB accreditation	We will discuss PHAB accreditation and go over domains 1 and 2 and review how health departments are scored for PHAB accreditation	PHAB domains 1-2 CDC Field Epi Manual Chapters 20-21	Sept 9-13	
Journal Club Reviews	How to review a journal article.  15-minute individual check-in meetings w/instructor		Sept 16-20	check-in  PHAB accreditation reviews due Sept 20
Exploring Data Visualizations	Exploring data visualization videos	CDC Field Epi Manual Chapters 4-6	Sept 23-27	First journal club article Due Sept 27
Emergency operations in field epidemiology	We will discuss how emergency operations and management fits into applied epidemiology	CDC Field Epi Manual Chapter 16	Sept 30-Oct 4	
Natural disasters and bioterrorism	We will discuss natural disasters and bioterrorism	CDC Field Epi Manual Chapters 22, 24	Oct 7-11	Fall break Oct 7-8
Data management	Dirty data	CDC Field Epi Manual Chapters 7-10	Oct 21-25	Second journal club article Due Oct 25

Field Epidemiology Communication	Discussing communication during outbreaks and other emergencies  Work on Single Overriding Communication Objective (SOCO) Worksheets	CDC Field Epi Manual Chapter 11-12	Oct 28-Nov 1	
Occupational and Injury	We will discuss occupational and injury-related investigations	CDC Field Epi Manual Chapter 21, 25	Nov 4-8	SOCO worksheets are due Nov 8  Third Journal Club Article Due Nov 8
Cultural considerations and health equity in epidemiology	We will discuss diverse populations, health equity, and health disparities		Nov 11-15	
Real-life outbreak investigations (steps 1-5)	Mock outbreak investigation		Nov 18-22	Fourth Journal Club Article Due Nov 22
Outbreaks (continued) Steps 6-10	(continued)		Nov 25-29	Thanksgiving Break: Wed – Fri Mock outbreak investigations due Nov 26
Final	Final		Dec 2-5	Finals Week