

PUBHLTH 6001 – Methods in Quantitative Data Analysis
4 credits – Autumn 2025
Online – Asynchronous

Course Co-Directors/Co-Instructors

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Instructors' Office Hours

Instructors will hold weekly office hours – 1 hour per week. See Carmen for dates/times.

All office hours are held **via Zoom**; see the course Carmen site for links.

Office hours are also available by appointment if you cannot make any of the scheduled times.

Instructor Feedback & Response Time

The following gives you an idea of our intended availability during the course:

- **Grading:** You can generally expect feedback on an assignment from either an instructor or TA within 7 days after submitting the assignment.
- **E-mail:** We aim to reply to e-mails (sent via Carmen) within 24 hours on school days. You can expect a response within 48 hours on weekends/holidays.
- **Discussion board:** Either the TA or the instructors will check and reply to messages in the discussion boards at least every 12 hours on school days, and every 24 hours on weekends, unless a different turnaround time (due to travel, etc.) is announced.

Graduate Teaching Assistants (GTA)

Alex Ning (ning.134@buckeyemail.osu.edu)

Shibani Chettri (chettri.1@buckeyemail.osu.edu)

GTA Responsibilities

The TA will hold weekly office hours (1 hour per week) and lead review sessions for any students who need help with class material. The TA may assist with scoring homework and exams; however, final grades will be assigned by the professors. **Any questions regarding grading should be directed to the professors and not the GTA.**

Course Description

Fundamentals of biostatistics and epidemiology for MPH students; course will cover core knowledge areas in quantitative data analysis, morbidity, mortality, and risk assessment to understand population health.

Prerequisites

Graduate standing in the Master of Public Health program, Master of Health Administration program, or permission of instructor.

Course Class Sessions and Mode of Delivery

This course consists of 100% online delivery of the class sessions via asynchronous Distance Learning (DL) mode. There are **no required sessions when you must be logged in to Carmen at a scheduled time.** (There are more details under Class Format.)

Course Learning Objectives

- CLO1) Choose, calculate, and interpret appropriate graphical and numerical summaries to describe populations.
- CLO2) Use biostatistical tools to make inference about a population using a sample.
- CLO3) Define terms, concepts, and key features of epidemiologic study designs.
- CLO4) Select and execute the appropriate analytical method for data arising from different study designs and with different types of outcomes.
- CLO5) Identify strategies in the design and conduct of epidemiologic studies that will minimize the adverse effects of error, especially bias.

Public Health Foundational Competencies:

- PHFC1) Apply epidemiological methods to the breadth of settings and situations in public health practice.
- PHFC2) Select quantitative and qualitative data collection methods appropriate for a given public health context.
- PHFC3) Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate.
- PHFC4) Interpret results of data analysis for public health research, policy or practice.

A complete list of College of Public Health Competencies is located in Appendix C of the CPH Graduate Student Handbook that can be found at: <https://go.osu.edu/cphgradcompetencies>

Carmen

There is a Carmen site for this course: <https://carmen.osu.edu>. All course materials are available via Carmen.

You will need to use BuckeyePass (buckeyepass.osu.edu) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device help article for step-by-step instructions (go.osu.edu/add-device).
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the Duo Mobile application (go.osu.edu/install-duo) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service

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

Class Format: How this online course works

- **Mode of delivery:** This course is 100% online delivery via asynchronous Distance Learning (DL) mode. There are **no required sessions when you must be logged in to Carmen at a scheduled time.**
- **Pace of online activities:** This course is divided into **weekly modules** that are released one week ahead of time. In this course the week begins on Tuesday and ends on Monday. **Weekly assignments are due at 11:59PM on Mondays.** Students are expected to keep pace with weekly deadlines but may freely schedule their efforts within that time frame.
- **Recorded Lectures:** Each module contains several recorded lectures. The divisions of biostatistics and epidemiology have created a repository of recorded lectures that we will be using. Our colleagues, Drs. Sarah Anderson and Rebecca Andridge, will be the speakers you hear in the majority of lectures, with Drs. Odei and Singh providing weekly supplemental content.
- **Credit hours and work expectations:** This is a **4-credit-hour course**. According to Ohio State policy (go.osu.edu/credithours), students should expect around 4 hours per week of time spent on direct instruction (e.g., watching recorded lectures, taking quizzes) in addition to 8 hours of homework/active learning activities (e.g., reading, problem sets, labs) to receive a grade of (C) average.
- **Attendance and participation requirements:** Because this is an online course, your attendance is based on your online activity and participation. The following is a summary of students' expected participation:
 - **Participating in online activities for attendance: AT LEAST ONCE PER WEEK**
You are expected to log in to the course in Carmen every week. (During most weeks you will probably log in many times.) If you have a situation that might cause you to miss an entire week of class, discuss it with the instructors *as soon as possible*.
 - **Office hours and live sessions: OPTIONAL**
All live, scheduled events for the course, including office hours, are optional.
 - **Participating in discussion forums: OPTIONAL**
Discussion boards will be a place to interact with the instructors and TA, for example, to ask questions about the material and assignments. Participation is optional, but highly encouraged.

Text/Readings:

There is no required textbook for this class. However, optional readings will be suggested because some students find that helpful. These readings are considered supplemental; they are there for reference as a companion to the lecture videos. *Some* of these resources will require you to be logged in to the library website (<http://library.osu.edu>) with your OSU name.#. Specifically, many readings will come from *Gordis Epidemiology* (Sixth edition) which is freely available through the library (<https://www-clinicalkey-com.proxy.lib.ohio-state.edu/#!/browse/book/3-s2.0-C20160022520>).

Course technology

Technology skills needed for this course

- Basic computer and web-browsing skills
- Navigating Carmen (go.osu.edu/canvasstudent)
- CarmenZoom virtual meetings (go.osu.edu/zoom-meetings) - optional

Required equipment

- **Computer:** current Mac (MacOs) or PC (Windows 10) with high-speed internet connection
- **Calculator:** Students should have access to a scientific calculator that can perform basic arithmetic, square roots, logarithms, and exponentiation. For this online class, a program such as Microsoft Excel may suffice.
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

Optional equipment (for participation in optional live office hours and/or review sessions)

- **Webcam:** built-in or external webcam, fully installed and tested
- **Microphone:** built-in laptop or tablet mic or external microphone

Required software

- See below for details on software required for this class

Technology support

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available and support for urgent issues is available 24/7.

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

Required Software

- **Stata** (<http://www.stata.com>)
Students are required to use Stata for problem sets that require the use of statistical software. The software must be purchased directly from Stata (<https://www.stata.com/order/new/edu/profplus/student-pricing/>).

If you do not plan to use Stata ever again after this course, you can consider purchasing the 6-month license for Stata/BE (\$48 as of 8/2025). If you will be taking additional biostatistics courses (e.g., PUBHBIO 6211) or conducting statistical analyses for your research, we recommend purchasing either an annual (\$94) or perpetual (\$225) license (please contact the instructors or your faculty advisor if you have additional questions on what would be the appropriate purchase).

Since there is no required text, you can consider purchasing Stata as your “book costs” for the course.

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

Assignments/Assessments

Quizzes: 10%

Each week has a short online multiple-choice quiz (taken via Carmen) to help reinforce understanding of the covered concepts. Students have unlimited attempts on each quiz; the highest quiz score will be kept. Please note that quiz questions are drawn from a bank and may be slightly different on each attempt. You cannot stop a quiz, logout/login and resume at a later time. **Quizzes must be completed on your own without any assistance from others, but books and notes are permitted.**

Exams: 30%

There are two exams in this course. All exams are open-note, open-book. You will take exams using Carmen. The exams will have multiple-choice and short-answer questions. Exams will require students to apply the principles of epidemiological study designs, select appropriate data collection and quantitative analysis methods in the context of public health practice and research, analyze quantitative data using output from statistical software (Stata), and interpret results of quantitative data analyses. Many questions will require students to perform calculations and will require the use of a calculator. There will not be a final exam. Each exam will be available for a 3-day period (exam-window) at the dates shown on the course calendar. Students may choose any time in the window to take the exam and will have 100 minutes to complete it once started. Exams must be completed by 11:59pm on the last day of the 3-day period (dates shown on course calendar). You cannot stop the test, logout/login and resume at a later time.

Exams must be taken within the scheduled windows. Students who miss taking any exam will be penalized fully in the absence of a documented excuse. Students with a conflict during the scheduled exam windows must contact the instructor immediately upon discovery of the problem. **Exams must be completed without the help of other individuals, but books and notes are permitted.**

Problem Sets: 20%

Each week has a corresponding problem set (homework assignment). Problem sets will involve application of principles of epidemiological study designs and biostatistical analyses as well as analysis of quantitative data. These assignments are due on the end date of the week (Monday) by 11:59pm. Problem sets will include both hand-calculation and computer (Stata) exercises. **Students are permitted (indeed, encouraged) to work together on problem sets, but submitted assignments must be written independently.**

In order for problem sets to be graded and returned as quickly as possible, late problem sets will not be accepted and will receive a 0. There are no exceptions to this rule beyond the assignment due date extension request option that is discussed below.

Labs: 15%

Each week has an associated lab assignment. These provide an opportunity for you to implement the concepts covered in the lectures (often using Stata), and completion of these exercises is a key component of this course. **Students are permitted to work together on labs but submitted assignments must be written independently.**

Any lab not completed by the due date (Monday at 11:59PM) will receive a score of 0. There are no exceptions to this rule beyond the assignment due date extension request option that is discussed below.

Learning Check-Ins: 5%

Every week you will complete a short online reflection of your learning for that week's material. This short, three-question questionnaire is meant to help you reflect on your learning (metacognition) and to provide us with valuable feedback on what topics are the "muddiest." These will be graded S/U based on "good faith" effort answering the three questions.

Late Work Policy:

- Assessments such as quizzes, problem sets, reflections, and discussion posts (but NOT the mid-term and final exams) can be submitted up to **2 days (exactly 48 hours) after the due date**

without penalty (i.e., due date of Wednesday at 11:59PM instead of Monday at 11:59PM). Students do not need to notify instructor(s) of late submissions as long as the submission is within this 2-day grace period.

- If missing a course deadline (by more than the 2-day grace period) because of extenuating circumstances, students must reach out to the instructor within 24 hours of the assignment deadline posted on Carmen in order to be considered for potential accommodations. Students should understand that extensions past the 2-day grace period are extremely rare, since there is already so much flexibility in this course.
- Because exams are available for at least one week, they may not be taken after the scheduled due date, and there is no 2-day grace period for these assessments.

Group Project: 20%

To solidify the concepts covered in class, you (as part of a small group) will analyze quantitative data in a statistically sound manner and produce a written report (one report submitted per group). This project will require students to integrate concepts from the entire course, including epidemiologic study designs and principles, choice of appropriate data collection methods, analysis of quantitative data, and interpretation of data analysis in the context of a specific public health research question. More details about the group project will be provided on Carmen. Groups will be assigned by the course instructors and will consist of 3-5 students within a program (i.e., the goal will be for you to work on the project with 3 other students who are in your degree program).

We have designed this project to be completed within small groups for several reasons. First, we hope that you will learn from each other as you discuss various choices you must make to complete the project. Second, public health doesn't happen in a vacuum. Working as a part of a team is an essential skill that this project will help you develop. Third, the broad array of learning and retention benefits that result from collaborative work is well documented.

Grading

Final class grade will be determined as follows:

Quizzes	10%
Problem Sets	20%
Lab Assignments	15%
Learning Check-Ins	5%
Exam 1	15%
Exam 2	15%
Group Project	20%

Grading Scale: This course will use the following grading scheme*:

A	93 – 100	Outstanding work that reflects mastery of the material and the ability to apply it
A-	90 – <93	Excellent work that reflects mastery of the material
B+	87 – <90	Good work that reflects mastery of most of the material
B	83 – <87	Good work that reflects mastery of some of the material
B-	80 – <83	Good work that reflects mastery of a few aspects of the material
C+	77 – <80	Mediocre work that reflects familiarity with, but not mastery of the material

C	73 – <77	Mediocre work that reflects familiarity with most of the material
C-	70 – <73	Mediocre work that reflects little familiarity with the material
D+	67 – <70	
D	60 – <67	
E	Below 60	

**The instructors reserve the right to adjust the grading scale if it appears necessary due to overall class performance. These adjustments will only raise a student's grade, not lower it.*

A student will be given a grade of “Incomplete” only if they have completed most of the class work and are unable to complete the work for a serious reason beyond their control. Students are responsible for educating themselves about the registrar's deadlines for withdrawal from the course. Assistance can be obtained from the College of Public Health, Office of Academic Programs and Student Services.

Minimum Final Grade for Course

The Division of Biostatistics has established a grade policy for progressing from PUBHLTH 6001 to PUBHBIO 6211. A grade of B- or higher in PUBHLTH 6001 is required to enroll in PUBHBIO 6211.

Assignment Scoring

Clear and effective communication is crucial in epidemiology and biostatistics. This rule is applied to all assignments (e.g., problem sets, exams, project). In any problem-solving question it is the student's responsibility to make sure that he/she/they justifies his/her/their answer and provides enough detail for the grader to understand. Points may be deducted for answers that are not well-justified, even if they are correct.

Any questions regarding grading must be addressed **within one week** of the return of the assignment/exam. No request of regrading on previous assignments/exams will be accepted after the final group project is submitted. As a general policy, when requested, the regrading will apply to the whole exam or the homework, not just to the specific part which the student thinks there might be a mistake. Consequently, regrading may lead to a lower overall score. **Any questions regarding grading must be directed to the professors.**

Policies for this Online Course

- **Quizzes and Exams:** Quizzes and exams must be completed on your own without the help of others, but you can use books and notes. Students must not communicate with anyone (other than the instructors) about the exam during the exam window. It is not permissible to use any artificial intelligence (AI) software, messaging board, online tutoring service, question-answering service, or any other source of human or computer assistance to complete quizzes or exams.
- **Problem Sets:** Students are permitted (indeed, encouraged) to work together on problem sets, but each student must independently write up and submit their own responses.
- **Lab Assignments:** Students are permitted to work together on lab assignments but submitted assignments must be written independently. Since these are an active learning component through which students will learn to use the statistical and epidemiological tools described in lecture, it is to the student's benefit to initially attempt the lab assignments independently.
- **Group Project:** This course includes a final group project, which is designed to be completed collaboratively within an assigned small group. Books, notes, and other outside materials are permitted. Further instructions will be provided on Carmen.

- **Learning Check-Ins:** These reflections should be completed individually (without collaboration).

Copyright Statement

This syllabus and all course materials (e.g., homework assignments, solution keys, course materials) are under copyright by the instructor and cannot be posted elsewhere without written permission.

Academic Integrity

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University, the College of Public Health, and the Committee on Academic Misconduct (COAM) expect that all students have read and understood the University's *Code of Student Conduct* and the School's *Student Handbook*, and that all students will complete all academic and scholarly assignments with fairness and honesty. The *Code of Student Conduct* and other information on academic integrity and academic misconduct can be found at the COAM web pages (<https://oaa.osu.edu/academic-integrity-and-misconduct>). Students must recognize that failure to follow the rules and guidelines established in the University's *Code of Student Conduct*, the *Student Handbook*, and in the syllabi for their courses may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Please note that the use of material from the Internet without appropriate acknowledgement and complete citation is plagiarism just as it would be if the source were printed material. Further examples are found in the *Student Handbook*. Ignorance of the *Code of Student Conduct* and the *Student Handbook* is never considered an "excuse" for academic misconduct.

If an instructor suspects a student of academic misconduct in a course, they are obligated by University Rules to report these suspicions to the University's Committee on Academic Misconduct. If COAM determines that the student has violated the University's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in the course and suspension or dismissal from the University. If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact the instructors to discuss.

Artificial Intelligence and Academic Integrity

Given that the learning goals of this class are calculating statistical and epidemiologic measures, defining terms, selecting appropriate analytical methods, using biostatistical tools to make inference about a population, and identifying design strategies for epidemiologic studies, the use of generative artificial intelligence (GenAI) tools such as Copilot or ChatGPT or translation platforms such as Google Translate is **not permitted in this course**. Any use of GenAI tools for work in this class may therefore be considered a violation of Ohio State's [Academic Integrity](#) policy and [Code of Student Conduct](#) because the work is not your own. The use of unauthorized GenAI tools will result in referral to the [Committee on Academic Misconduct](#). If we suspect that you have used GenAI on an assignment for this course, we will ask you to communicate with us to explain your process for completing the assignment in question.

If you feel you need to use GenAI for translation, please contact the instructors first. If you have any other questions regarding this course policy, please contact us.

Office of Student Life: Disability Services

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let the instructors know immediately so that we can privately discuss options. To establish reasonable accommodations, we may request that you register with Student Life Disability Services. After registration, make arrangements with us as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. Contact SLDS at: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue. Students seeking to request COVID-related accommodations may do so through the university's request process (slds.osu.edu/covid-19-info/covid-related-accommodation-requests/), managed by Student Life Disability Services.

Mental Health Services

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting <https://ccs.osu.edu/> or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at 614-292-5766 and 24-hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org.

Religious Beliefs or Practices Accommodations

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a

course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the [Civil Rights Compliance Office](#). (Policy: [Religious Holidays, Holy Days and Observances](#))

Academic Misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee ([Faculty Rule 3335-5-48.7 \(B\)](#)). For additional information, see the [Code of Student Conduct](#).

Intellectual Diversity

Ohio State is committed to fostering a culture of open inquiry and intellectual diversity within the classroom. This course will cover a range of information and may include discussions or debates about controversial issues, beliefs, or policies. Any such discussions and debates are intended to support understanding of the approved curriculum and relevant course objectives rather than promote any specific point of view. Students will be assessed on principles applicable to the field of study and the content covered in the course. Preparing students for citizenship includes helping them develop critical thinking skills that will allow them to reach their own conclusions regarding complex or controversial matters.

Grievances and Solving Problems

A student who encounters a problem related to his/her educational program has a variety of avenues available to seek resolution. According to University Policies, if you have a problem with this class, you should seek to resolve the grievance concerning a grade or academic practice by speaking first with the instructor or professor. Then, if necessary, you may take your case to the department chairperson. Specific procedures are outlined in [Faculty Rule 3335-8-23](#), the [CPH Graduate Student Handbook](#), and the [CPH Undergraduate Student Handbook](#). Grievances against graduate, research, and teaching assistants should be submitted first to the supervising instructor, then to the chairperson of the assistant's department.

Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Civil Rights Compliance Office:

Online reporting form at <http://civilrights.osu.edu/>,
Call 614-247-5838 or TTY 614-688-8605,
Or Email civilrights@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Civil Rights Compliance Office to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

Course Schedule*

(With Alignment of Course Learning Objectives and Foundational Competencies)

Week	Date	Modules/Topics	Assignments	Course Learning Objectives	Foundational Competencies
1	8/26 to 9/1	MODULE 1 – Snapshot 1: Point-in-time (PART 1) Biostatistics Terminology and Types of Data Summarizing Categorical Data Measures of the Center Measures of Spread	Module Quiz 1 Problem Set 1 Lab 1 Learning Check-in 1	CLO1: Choose, calculate, and interpret appropriate graphical and numerical summaries to describe populations	PHFC2, PHFC3, PHFC4
2	9/2 to 9/8	MODULE 2 – Snapshot 1: Point-in-time (PART 2) Populations Disease Quantification and Prevalence Screening Validity	Module Quiz 2 Problem Set 2 Lab 2 Learning Check-in 2		
3	9/9 to 9/15	MODULE 3 – Snapshot 2: Over time Incidence Surveillance Mortality Adjustment/Standardization	Module Quiz 3 Problem Set 3 Lab 3 Learning Check-in 3		
4	9/16 to 9/22	MODULE 4 – Simple Random Sample: Point Estimates and CIs Sampling Distributions Random Variables Standard Error and Central Limit Theorem Confidence Interval for a Proportion Confidence Interval for a Mean	Module Quiz 4 Problem Set 4 Lab 4 Learning Check-in 4	CLO2: Use biostatistical tools to make inference about a population using a sample	PHFC2, PHFC3, PHFC4
5	9/23 to 9/29	MODULE 5 – Simple Random Sample: Hypothesis Tests Introduction to Hypothesis Tests Tests for One Proportion Test for One Mean Hypothesis Tests: Errors and Power Study Design: Sample Size Calculations	Module Quiz 5 Problem Set 5 Lab 5 Learning Check-in 5		
6	9/30 to 10/6	Exam 1 See Carmen for specific days that exam will be available	Exam 1	CLO1, CLO2	

Week	Date	Modules/Topics	Assignments	Course Learning Objectives	Foundational Competencies
7	10/7 to 10/13	MODULE 6 – Epidemiologic Study Designs (PART 1) Intro to Causal Inference Models of Disease Causation Intro to Study Designs Experimental Designs	Module Quiz 6 Problem Set 6 Lab 6 Learning Check-in 6	CLO3: Define terms, concepts, and key features of epidemiologic study designs	PHFC1, PHFC2
8	10/14 to 10/20	Autumn Break (no new material or assignments)			
9	10/21 to 10/27	MODULE 7 – Epidemiologic Study Designs (PART 2) Cohort Studies Cohort Studies: Issues and Types Cohort Studies: Biases Case-Control Studies Case-Control Studies: Control Selection Cross-sectional Designs and Summary of Designs	Module Quiz 7 Problem Set 7 Lab 7 Learning Check-in 7	CLO3: Define terms, concepts, and key features of epidemiologic study designs	PHFC1, PHFC2
10	10/28 to 11/3	MODULE 8 – Binary Exposure/Binary Outcome Comparing Two Proportions: RD, RR, OR More Details About RD, RR, OR Test to Compare Two Proportions More About Chi-Square test Measures of Impact	Module Quiz 8 Problem Set 8 Lab 8 Learning Check-in 8	CLO4: Select and execute the appropriate analytical method for data arising from different study designs and with different types of outcomes	PHFC2, PHFC3, PHFC4
11	11/4 to 11/10	MODULE 9 – Binary Exposure/Continuous Outcome Comparing Two Means Standard Error and CI for Mean Difference Testing for Two Means Two Paired Means	Module Quiz 9 Problem Set 9 Lab 9 Learning Check-in 9		
12	11/11 to 11/17	MODULE 10 – Continuous Exposure/Continuous Outcome Scatterplots and Correlation Simple Linear Regression: Estimation Simple Linear Regression: CIs and Testing R ² and Correlation	Module Quiz 10 Problem Set 10 Lab 10 Learning Check-in 10		
13	11/18 to 11/24	Exam 2 See Carmen for specific days that exam will be available	Exam 2	CLO3, CLO4	

Week	Date	Modules/Topics	Assignments	Course Learning Objectives	Foundational Competencies
14	11/25 to 12/1	Thanksgiving Break (no new material or assignments)			
15	12/2 to 12/8	MODULE 11 – Bias and Confounding Selection Bias Information Bias Confounding	Module Quiz 11 Problem Set 11 Lab 11 Learning Check-in 11	CLO5: Identify strategies in the design and conduct of epidemiologic studies that will minimize the adverse effects of error, especially bias	PHFC1, PHFC2, PHFC3, PHFC4
16	12/9 to 12/15	Work on final group project (no new material or assignments)			
	12/15	Group Project Due	Group Project	CLO1-CLO5	PHFC1-PHFC4

**Any readings for each week will be posted on Carmen*