

Course Title: Principles and Methods of Epidemiology

Course Number: PHCO 0502-JWEB

Course Prerequisite(s): *Passed the Quantitative Skills Assessment*

Course Instructor: **Josephine Shenouda, DrPH, MS**

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Course Website: <https://tlt.rutgers.edu/canvas>

Class lectures, readings, homework assignments, quizzes, syllabus updates, and resources will be posted and updated regularly. *It is critical that you check the Canvas site regularly to ensure that you don't miss important updates or supplementary class material.*

Help with technical problems with Canvas is available 24/7: Email help@canvas.rutgers.edu or call: 877-361-1134

Required Course Text: Friis & Sellers, Epidemiology for Public Health Practice, 6th Edition
[Available digitally through Rutgers Libraries](#)

Course Description: This course introduces students to the study of disease and ill health through their patterns of occurrence in human populations. The approaches of epidemiology in estimating the burden of disease, in making inferences about cause of disease, and in evaluating primary, secondary, and tertiary prevention strategies are presented.

Competencies Addressed:

The competencies addressed in this course include:

- A. Explain public health history, philosophy and values
- B. List major causes and trends of morbidity and mortality in the United States or other community relevant to the school or program
- C. Discuss the science of primary, secondary and tertiary prevention in population health, including health promotion, screening, etc.
- D. Explain the critical importance of evidence in advancing public health knowledge
- E. Apply epidemiological methods to the breadth of settings and situations in public health practice
- F. Identify key sources of data for epidemiologic purposes, such as vital statistics and disease registries.
- G. Recognize specific features of different study designs and identify their respective strengths and weaknesses.

Please visit the Concentration webpages on the School of Public Health's website at sph.rutgers.edu/ for additional competencies addressed by this course for other degrees and concentrations.

Course Objectives:

By the completion of this course, students will be able to:

- Explain the basic concepts of descriptive and analytical epidemiology.
- Discuss uses and applications of epidemiology
- Define the influence of population dynamics on community health
- Identify an epidemiologic study design by its description
- List the main characteristics, advantages, and disadvantages of epidemiologic studies
- Apply the criteria used to assess a causal association
- Calculate appropriate epidemiologic measures based upon the study design

Course Communication: If you have a question that you feel may help other students as well, please post your question in the "Class Help: Ask A Question" discussion thread. If you have a personal concern or question you would like to talk about, please email the instructor directly or attend office hours. During the work week, the instructor will aim to respond to personal emails or your posts directed to the instructor within 48 hours. For communications posted/emailed over the weekend, the instructor will try to respond by the end of the business day on Tuesday for most situations. If the instructor is out of town without Internet access, the instructor will post a note in Canvas in Announcements. The goal will be to post grades within seven days of the final due date of the assignment, unless otherwise stated.

Fostering Course Community: The instructor will work to foster community through discussion boards, chat sessions, online activities, etc. Students are encouraged to get to know each other and contribute their particular strengths, expertise, and experience to enrich the class. Working with your classmates, explaining concepts to each other, and interacting with your instructor (and course assistant, if assigned) are the most effective ways to understand the course concepts and succeed in this course. By posting questions on Canvas (rather than via email) the entire class has the benefit of learning from the discussions, so please consider posting your question as a first option.

Canvas Announcements: This course will use Announcements in Canvas to share course information, highlight lessons learned, and send reminders. Be sure you review your notification settings in Canvas so that you receive these Announcements using your preferred contact method. In addition, please be sure to check the Announcements tab at least once each week in the Canvas shell for this course.

Module Schedule: All course deadlines are listed in Eastern Time Zone. Canvas will record all deadlines in this time zone. If you are in a different time zone, plan accordingly. Each week will begin on a [insert day of week] and will end on [insert day of week]. In order to complete all of the module assignments, you should plan to spend approximately 9 hours per week on the course material for a total of approximately 145 hours of course-related activities (discussion boards, assignments, papers, readings, etc).

Discussion Board Guidelines and Expectations: Discussion prompts will be posted on Canvas weekly. You will utilize readings, videos and other information to inform and engage in the discussion boards each week. Respect, critical thinking and application of knowledge will guide these discussions. Original posts for Discussions are due by [insert day of week and time due with time zone] and your replies are due [insert day of week and time due with time zone]. The instructions and expectations for the Discussion Board, including a rubric, are posted on Canvas.

Course Requirements and Grading:

This is a fully asynchronous, online course that will be completed in 15 weeks over the Spring 2023 semester. We will cover 12 modules/units during this 15-week period; every week you will be completing one module. Each week will run from Monday (12:01 AM) to Sunday (11:59 PM).

Grading: Final course grades will be based on the following:

Web Quizzes	25%
Class Projects	25%
Discussions	10%
Midterm	20%
Final	20%

Grading Scale:

Final Class %	Grade
94 – 100	A
90 – <94	A-

87 – <90	B+
84 – <87	B
80 – <84	B-
77 – <80	C+
70 – <77	C
<70	F

1. **Quizzes:** Twelve quizzes will be given throughout the semester on Canvas. Quizzes are open-book/note and untimed but must be completed by the designated due date/time. The quizzes are designed for students to maintain a rhythm with class work and for instructors to assess students understanding of class material. Except where noted otherwise, quizzes will be made available on Canvas after class each Friday and will be due before class the following week. Each quiz will have a total of 10 points and the lowest two quiz grades will be dropped. Late submission will result in 0 points.
2. **Class Project:** In this course, you will complete an individual project designed to introduce you to the basic concepts of epidemiology. The project is made up of five assignments and each assignment is worth 5 points of your course grade (total 25%). Even though this is an individual project, I encourage you to work in groups. The grading for this project is based on a specific rubric posted on canvas for each part of the project.
3. **Discussions/Participation**
We will have discussions throughout the semester. All students will be asked to read the discussion board for current topics, article and question. Each student is to provide a unique post and a response to one other student's post. The Discussion Grade will be based on participation in the class discussions– including number of posts, thoughtfulness of comments and relevancy to public health surveillance. The Discussion grades are assigned on a 3-level scale. The main determinant of discussion grades is effort and content (see detail below): **Have you participated actively and on time?** Are you trying to apply what you are learning to the discussion?

Discussion Board Grading Rubric:

Contributions Description

Provocative Goes beyond simply answering the prompt; relevant to epidemiology and concepts learned in class; attempts to stimulate further thought & discussion; respectful of other's posts

Substantial Response provides most of the content required by the prompt, but does not require further analysis of the subject, some relevancy to public health and epidemiology

Superficial Response provides obvious information without further analysis of the concept; lacks depth of knowledge or reasoning; very little public health application

None No response provided to the prompt within the associated timeframe

4. **Midterm and Final Examinations:** The exams will be given online and need to be completed within the time window assigned. This tests are largely a combination of multiple choice, calculations, and short answer questions similar to the quizzes. See Section D for exams dates.
5. **Extra Credit - TBD**

Course Canvas Site: The course Canvas site can be found after logging in to <http://Canvas.rutgers.edu/>. Please test your access to the site as soon as possible. **Important course materials will be posted there including lectures and class assignments.** If you cannot access the site, let Dr. Shenouda **know as soon as possible**. There are training materials available to help you with Canvas and can be accessed from your Canvas homepage or you can reach out to Canvashelp@ca.rutgers.edu for assistance.

Competency	Course Objectives	Week	Assessment(s)
A	b	1, 2	Quiz 1; Exams
B	c, g	3	Quiz 2; Exam;
C	b, g	2, 12	Quiz 1,7; Project 1, Exams
D	a, b, f	2, 5, 6	Quiz 1,4,5; Project 2 Exams
E	b, e, f, g	8, 10, 11, 12	Quiz 6,7; Projects; Exams
F	a, c, g	4,10,12	Quiz 3; Exams
G	d, e, g	5, 6, 8, 10, 11, 12	Quizzes 4-7; Project 2; Exams

Course Schedule:

Week	Date	Topic	Readings	Quizzes & Web-Based Activity	Due
1	1/17	Introduction to Epidemiology and History of Epidemiology	Ch 1	Quiz 1 Web – Learn about the MMWR	1/22
2	1/23	Practical Epidemiological Applications	Ch 2	Quiz 2 Web – Population pyramids/Age Structure	1/29
3	1/30	Measures of Morbidity and Mortality Used in Epidemiology	Ch 3	Quiz 3; Web – Population denominators	2/5

4	2/6	Descriptive Epidemiology and Data Sources	Ch 4 & 5	Quiz 4 Web – Using R to create a surveillance map	2/12
5	2/13	Study Designs: Ecologic, Cross-Sectional, Case-Control	Ch 6	Quiz 5 Web - NHIS	2/19
6	2/20	Study Designs: Cohort Studies	Ch 7	Class Project Part 1 Web – How to use Endnote software	2/26
7	2/27	Study Designs: Experimental Studies	Ch 8	Quiz 6 Web - Prep for Midterm	3/5
8	3/6	Midterm Examination	Chapters 1-8; Lectures 1-7		
	3/13	Spring Break	-	-	
9	3/20	Causal Inference and Measures of Effect	Ch 9	Quiz 7; Class Project Part 2	3/26
10	3/27	Interpreting Data	Ch 10	Quiz 8 Class Project Part 3	4/2
11	4/3	Screening Tests	Ch 11	Quiz 9; Web – Using Redcap for data collection	4/9
12	4/10	Guest Lecture: TBD	TBD	Quiz 10 Class Project Part 4	4/16
13	4/17	Special Topics: Social Epidemiology	Ch 12, 14	Quiz 11; Class Project Part 5	4/23
14	4/24	Special Topics: Public Health Surveillance	TBD	Quiz 12 Web – prep for Final	4/30
15	5/1	Final Examination	Chapters 9-14 Lectures 9-14		

Learning Management System: Canvas will be used throughout the semester for course syllabus, assignments, announcements, communication and/or other course-related activities. It is the student's responsibility to familiarize themselves with Canvas and check it regularly. If you have difficulties accessing Canvas, please inform the instructor and Canvas Support (help@oit.rutgers.edu). Canvas is accessible at canvas.rutgers.edu.

School of Public Health Honor Code: The School of Public Health Honor Code is found in the School Catalog (sph.rutgers.edu/academics/catalog.html). Each student bears a fundamental responsibility for maintaining academic integrity and intellectual honesty in his or her graduate work. For example, all students are expected to observe the generally accepted principles of scholarly work, to submit their own rather than another's work, to refrain from falsifying data, and to refrain from receiving and/or giving aid on examinations or other assigned work requiring independent effort. In submitting written material, the writer takes full responsibility for the work as a whole and implies that, except as properly noted by use of quotation marks, footnotes, etc., both the ideas and the works used are his or her own. In addition to

maintaining personal academic integrity, each student is expected to contribute to the academic integrity of the School community by not facilitating inappropriate use of her/his own work by others and by reporting acts of academic dishonesty by others to an appropriate school authority. It should be clearly understood that plagiarism, cheating, or other forms of academic dishonesty will not be tolerated and can lead to sanctions up to and including separation from the Rutgers School of Public Health.

Students with Disabilities: Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student must apply for Services by first completing a Registration Form with the Rutgers Office of Disability Services (ODS) at ods.rutgers.edu. The student will also be required to participate in an ODS intake interview and provide documentation. If reasonable accommodations are granted, ODS will provide you with a Letter of Accommodations which should be shared with your instructors as early in your courses as possible.

Commitment to Safe Learning Environment: The Rutgers School of Public Health is committed to helping create a safe learning environment for all students and for the School as a whole. Free expression in an academic community is essential to the mission of providing the highest caliber of education possible. The School encourages civil discourse, reasoned thought, sustained discussion, and constructive engagement. Provocative ideas respectfully presented are an expected result. An enlightened academic community, however, connects freedom with responsibility. The School encourages all students to disclose any situations where you may feel unsafe, discriminated against, or harassed. Harassment or discrimination of any kind will be not tolerated and violations may lead to disciplinary actions.

Student Well-Being: The School of Public Health recognizes that students may experience stressors or challenges that can impact both their academic experience and their personal well-being. If the source of your stressors or challenges is academic, students are encouraged to discuss these challenges and circumstances with their instructor, if they feel they may need additional support or temporary accommodations at the beginning or during this course. The course instructor may consider making reasonable temporary adjustments depending on the student's situation. For personal concerns or if additional support is needed, students may reach out to the [Office of Student Affairs](#) or any of the appropriate referral resources listed on the [SPH Student Connect](#) Canvas page.

Reporting Discrimination or Harassment: If you experience any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking, know that help and support are available. You may report such incidents to the [RBHS Title IX Office](#) or to the School of Public Health's [Office of Student Affairs](#). Rutgers University has staff members trained to support survivors in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. If you experience any other form of discrimination or harassment, including racial, ethnic, religious, political, or academic, please report any such incidents to the School's [Office of Student Affairs](#). The School strongly encourages all students to report any incidents of discrimination or harassment to the School. Please be aware that all Rutgers employees (other than those designated as confidential resources such as advocates, counselors, clergy and healthcare providers as listed in Appendix A to [Policy 10.3.12](#)) are required to report information about such discrimination and harassment to the School and potentially the University. For example, if you tell a faculty or staff member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty or staff member must share that information with the [RBHS Title IX Coordinator](#). If you wish to speak to a confidential employee who does not have this reporting responsibility, you can find a list of resources in Appendix A to University [Policy 10.3.12](#). For more information about your options at Rutgers, please visit [Rutgers Violence Prevention and Victim Assistance](#).

Overview of School Policies: Academic and non-academic policies and procedures, such as Auditing a Course, Retaking Courses, Grade Grievance and others that cover registration, courses and grading, academic standing and progress, student rights and responsibilities, graduation and more may be found under [Policies](#) on the School of Public Health website. Below are select specific policies; however,

students are responsible for keeping informed about academic and non-academic policies and procedures beyond those noted on this syllabus.

Graduate Student Computer Policy: Students are required to possess a personal laptop, no older than approximately two years, that must meet minimum requirements which may be found online at: sph.rutgers.edu/student-life/computer-support.html

Policy Concerning Use of Recording Devices and Other Electronic Communications Systems: When personally owned communication/recording devices are used by students to record lectures and/or classroom lessons, such use must be authorized by the faculty member or instructor who must give either oral or written permission prior to the start of the semester and identify restrictions, if any, on the use of mobile communications or recording devices.

Policy Concerning Use of Turnitin: Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com (directly or via learning management system, i.e. Canvas) for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site. Students who do not agree should contact the course instructor immediately.

Withdrawal/Refund Schedule: Students who stop attending their course(s) without submitting a completed [Add/Drop Course](#) form will receive a failing grade. Furthermore, students dropping to zero credits for the semester are considered withdrawn and must submit a completed [Leave of Absence](#) form from the School of Public Health's Office of Student Affairs. The School of Public Health refunds tuition only. Administrative and technology fees are non-refundable. You may find the Withdrawal/Refund Schedule on the School of Public Health website at: sph.rutgers.edu/academics/academic-calendar.html

Important Dates to Remember: For this course, **January 30th** is the last day to add a course to existing schedule and **January 30th** is the last day to drop course w/o "W" grade if not withdrawing in full. **March 27th** is the last day to withdraw with a grade of W.