

We acknowledge that we are on the traditional territory and homelands of the Luiseño/Payómkawichum people: For more information, visit [this webpage](#).

KINE 404: Introduction to Epidemiology

Spring 2025 – 3 units

Instructor: Marina Katague, MPH (any pronouns)
Please refer to me by my first name ([Marina](#)).
Email: mkatague@csusm.edu
Lecture: Asynchronous Online
Student Hours: Tuesdays, 9am-10am or by appointment **HELD ON ZOOM**
Zoom Link: <https://SDSU.zoom.us/j/9256406361>
Zoom Meeting ID: 9256406361
Phone: 925-640-6361

Course Description

This is an introductory course in the basic study of the risk factors for disease in populations. The emphasis of the course is to understand the methodology of the public health research, and how evidence-based medicine is used to determine optimal treatment in approaches to clinical practice. The course provides instruction in both observational and structured methodologies often used in epidemiological research.

Accommodations & Resources

I'm fully committed to making sure that you learn everything you were hoping to learn from this class! I will make whatever accommodations I can to help you finish your exercises, do well on your book report and exam, and learn and understand the class material. Under ordinary conditions, I am flexible and lenient with grading and course expectations when students face difficult challenges. Under pandemic conditions, that flexibility and leniency is intensified. **If you tell me you're having trouble, I will not judge you or think less of you. I hope you'll extend me the same grace.**

You **NEVER** owe me personal information about your health (mental or physical). You are **ALWAYS** welcome to talk to me about things that you're going through, though. If I can't help you, I usually know somebody who can. If you need extra help, or if you need more time with something, or if you feel like you're behind or not understanding everything, **do not suffer in silence!** Talk to me! I will work with you. **I PROMISE.** I want you to learn lots of things from this class, but I primarily want you to stay healthy, balanced, and grounded during this crisis.

Your academic wellbeing and your success in this class are extremely important to me. This course will consist of at-home lectures, assignments, and readings, that are designed to increase students understanding of the theoretical underpinning of epidemiology while applying various methods. At times, we all need accommodations because we all learn differently. If there are aspects of this course that prevent you from learning or exclude you, please let me know as soon as possible. Together we'll develop strategies to meet both your needs and the requirements of the course.

If you need official accommodations, you have a right to have these met. I encourage you to visit the [Office of Disability Support Services](#) to determine how to receive accommodations and how you could improve your learning as well. There are also a range of [resources](#) on campus, including the [Academic Success Center](#), [Writing Center](#), [Tutoring Center](#), and [Academic Advising Center](#). There are also many opportunities for gaining research experience at CSUSM, you can learn more about them here: [Research Opportunities at CSUSM and Beyond](#). I also encourage you to explore the different centers we have on campus to support student success: [CSUSM Student Centers](#).

What Will We Learn in This Class?

Course Learning Outcomes

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

1. Define *epidemiology* and be able to discuss the evolution of the field.
2. Understand the current role of *epidemiology* as an approach to addressing public health problems.
3. Describe the historical background of *epidemiology* and identify key figures that were influential in the field.
4. Define health disparities and social determinants of health and describe how they impact health.
5. Discuss how racism and discrimination impact health.
6. Describe epidemiological approaches to defining and measuring health problems in defined populations.
7. Calculate various epidemiologic measurements and understand their applications to determining risk of morbidity and mortality.
8. Identify research designs used in epidemiology and demonstrate application of how studies are designed to solve public health problems.
9. Identify and understand the role of epidemiology in preventive medicine and disease investigation.
10. Explain how epidemiologic methods are used to evaluate new drugs and other therapeutic modalities, the benefits of screening and early disease detection, and alternative ways of improving health.
11. Apply principles of epidemiology to advocate for health equity.
12. Learn ethical principles as they relate to conducting population health research.
13. Critically review and interpret peer-reviewed epidemiologic research studies.

Readings and Additional Resources

Textbook

Foundations of Epidemiology by Marit L. Bovbjerg, 1st Edition

This textbook is [free and available for download](#) as PDF or EPUB.

Articles

See course schedule below. Articles will be shared as PDF via Canvas.



How to be Successful in this Course

This course will be taught asynchronously online. It is conducted through Canvas, and Canvas announcements/email will be my primary mode of communicating with you. Homework assignments are designed to deepen your understanding of epidemiological principles by guiding you through defining specific problems, organizing known and unknown information, and developing actionable plans. The course structure emphasizes active engagement, critical analysis, and synthesis of material, enabling you to apply principles to health-related questions.

Lecture Recordings

All lectures will be recorded and uploaded to OneDrive or YouTube. A link to the recordings will be provided on Canvas each Friday.

Readings

Textbook readings are optional but highly recommended as a resource to clarify lecture concepts. If you encounter difficulties understanding the material, refer to the associated textbook chapter. *Article readings* are mandatory and should be read after watching the lecture but before taking the week's quiz. As part of a major assignment, you will also be required to complete a *book reading* and reflect on its relevance to course themes.

Student Office Hours

Student office hours (most faculty call these office hours) are meant for you and are a dedicated time that I am available to meet about whatever you would like to **WITHOUT the need to make an appointment**. This means that I will be in my home office waiting for you to talk remotely about

whatever questions you may have. We can talk about the course, your career plans, letters of recommendation, campus resources, the meaning of life, or anything else you would like to talk about. Since this class is asynchronous online, and I wouldn't otherwise get the opportunity to put a face to your name—if you come to office hours, even just to say “hello”, before Spring break, I will award you 10 points of extra credit. You do not need to e-mail me to let me know you are coming to student hours, but you may need to wait to see me if other students also attend.

My Availability & Communication Policy

I also know that many of you have obligations outside of this class and you may not be able to make my regularly scheduled student hours. If that is the case you can also contact me via e-mail to schedule another time to meet. I am available to meet in person, by email, phone, and Zoom. I am working from home in San Diego a lot of the time, and have broad availability to arrange office hours in a way that works with your schedule! **My goal is to respond to emails within 24 hours Monday through Friday;** if you don't hear back from me in that time frame, please follow-up, as it likely means I missed your message. Emails received over the weekend will not receive a response until the next working day. **Please feel free to text me if I miss your email as well;** I am much better at communication with my one phone (as opposed to my three email addresses).

Building our Learning Community

Positionality Statement. I recognize that I am positioned in a place of power as the instructor in this class; I also acknowledge my privileges in academia (two college educated parents, growing up in a middle-income family, white passing biracial). My privileges intersect with some identities students may bring to this class: Filipino, often food insecure, and being a member of the LGBTQ+ community. While I recognize the privilege education and position, I have a deep understanding and commitment to using my privilege and position of power to uplift others who face barriers to access their right to an education.

Given that, your experience in this classroom is extremely important to me. I strive to create a learning environment and classroom where you will be treated with respect, and I welcome individuals of all ages, backgrounds, beliefs, ethnicities, genders, gender identities, gender expressions, immigration status, national origins, religious affiliations, sexual orientations, ability – and other visible and nonvisible differences. At times, I may discuss difficult and complex topics and I welcome and value all perspectives. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of our classroom community. I hope to create a learning environment that supports a diverse body of students, diversity of thoughts, perspectives, and experience and that honors your identity. To accomplish this:

- If you use a set of pronouns or name that is different from what appears in your official record, please let me know!
 - It helps if you do this as soon as possible, but this invitation is extended throughout the semester and beyond.
 - If you are thinking about going by a new name or using new pronouns, this classroom is a space to explore that without judgment and to have your identities honored.
- If you feel like your performance is being impacted by experiences, whatever they may be, outside of the classroom please talk to me and use me as a resource. I am here to support your development in all aspects; I will be an advocate on your behalf. Anything you share with me will be kept confidential and anonymous, to the extent that it is legally allowed. If I am unable to help or you want to seek other help I can point you to outside resources.
- As many are, I am still learning about diverse perspectives and identities and continue to seek new knowledge and perspectives. I am still learning and reflecting on my own biases. If I or anyone else in the class says something that makes you feel uncomfortable, please talk to me about it.

Self-Care Supports Your Success

Take care of yourself so you have space to care for others, succeed in this course, and contribute meaningfully to our community. Self-care is important to your well-being and mental health! Find what activity fulfills you and engage in that activity daily.

I invite you to prioritize self-care throughout this semester and beyond – it makes you a better scientist and a better human being.

Please feel free to ask for an extension if you are compromising self-care or caregiving responsibilities for this class – I'm more than happy to work with you!

Food and Housing

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Dean of Students for support (<https://www.csusm.edu/dos/index.html>). Campus resources to help also exist including the CSUSM Cougar food pantry:

<https://www.csusm.edu/asi/pantry/index.html> and emergency funds:

https://www.csusm.edu/asi/services/emergency_fund.html. Furthermore, please notify the instructor if you are comfortable in doing so. This will enable me to provide any resources that I may possess or advocate on your behalf. If you ever need food or other basic necessities I am always willing to provide what I can.

Religious Accommodations

If an academic or work requirement conflicts with your religious practices and/or observances, you are welcome to request reasonable accommodations. Please let me know as soon as you are able so we can work together.

Learning Differences, Access, and Accommodations

This course is intended for all students, including those with mental, physical, or cognitive disabilities, illness, injuries, impairments, or any other condition that tends to negatively affect one's equal access to education and/or learning abilities. I am committed to creating a learning space where **everyone** can participate as fully as possible. I strive to provide information and resources in multiple formats (text, visuals, audio, silent work, group work, lecture, conversation, etc.) to enable more access possibilities for every student. If, at any point, you find yourself not able to fully access the space, content, and experience of this course, you are welcome (and not required) to contact me by email, phone, or during office hours to discuss your specific needs. If there is a design adjustment that can be made or if an accommodation might be needed to overcome the limitations of the design, I am always happy to consider creative solutions as long as they do not compromise the intent of the assessment or learning activity.

Students with disabilities may formally register with the Office of Disability Support Services (DSS). I encourage you to contact DSS (Craven Hall 5205; (760) 750-4905; TTY (760) 750-4909; <https://www.csusm.edu/dss/index.html>). If you have a diagnosis, DSS can help you document your needs and create an accommodation plan for your success. Students authorized by DSS to receive reasonable accommodations should contact me as soon as possible so that we can discuss the best ways to meet your needs. Course accommodations cannot be applied retroactively (e.g., after an examination) but it is never too late to request accommodations as our bodies and our circumstances are continuously changing. I highly encourage you to seek out necessary resources early and often. If you are unsure of available resources or accommodations, please see me and I am happy to discuss at any time. You are not required to, nor will I ever ask you to disclose your condition or diagnosis to me to discuss access and accommodation needs.

How Will You Be Assessed?

I am much more interested in *your learning* than *your grade*. **Research shows your grade does *not* reflect what you learn, who you are as a person, and what you will contribute to the world.** Many of the assessments will ask you to *deeply reflect* on your learning, contributions to the class, and how topics intersect with different aspects of our society. These assessments give me knowledge to adjust the course to meet *your educational needs*. The following provides a breakdown of course assessments:

- **Quizzes** are open book and open note. They serve more of an ‘exit ticket’ role, to ensure your understanding before we move forward. Quizzes are individual assessments. Quizzes provide opportunities for students to practice concepts covered in class and complete problems similar to the exam questions.
- **Unit homework** is either a written reflection or problem set that will culminate each unit.
- The **book report** will be an opportunity to connect with longer form published narratives, linking concepts from the course to a book (fiction or non-fiction) with epidemiological merit.
- This course includes one **exam**, which consists of two sections: a timed portion and a take-home portion. The exam is an individual assessment administered through Canvas. It is open book (all readings) and open note, but the use of the internet as an outside resource is strictly prohibited.
 - The **timed portion** of the exam will include multiple-choice, fill-in-the-blank, matching, and true/false questions. You will have a two-hour window to complete this portion during finals week. The format will be similar to your quizzes.
 - The **take-home portion** will include short-answer questions, math problems, and essay questions. You will have the entire duration of finals week to complete and submit this portion. The format will align with your unit homework assignments.

Grade Composition

Assessment	Number	Value (each)	Total Points
Quizzes	12	10	120
Unit Homework(s)	3	50	150
Final Exam	1	130	130
Book Report	1	100	100
Total	--	--	500

Final Letter Grade Criteria (scored by points)

A	B	C	D	F	Pass/Fail
A ≥ 450	B+ ≥ 430	C+ ≥ 375	D ≥ 300	F < 300	Pass ≥ 350
	B ≥ 415	C ≥ 350			
	B- ≥ 400				

Grading and Late Assignment Policy

- Grades will generally be posted within one week of your assignment being submitted if it is submitted by the due date. Assignments submitted after the due date may have a delay in grading but I will strive to get them graded within one week of submission.
- You are always allowed to ask for a review/re-grade of any assignment but please know that requests for re-grades may result in the grade being increased or decreased. I am happy to go over any assignment content with you at any time and help you determine how to improve performance on future assignments. I suggest you review your grades as soon as possible after they are posted to ensure you understand the content of the course and the grade received.
- I understand that we are in uncertain times and that you have many responsibilities that might mean you have to ask for adjustments or other assistance. If that is the case please notify the

instructor as soon as you are able. Students should do their best to keep up with course material and let the instructor know as soon as possible if you are struggling with this course format so you do not fall behind on material.

- If you do not think you will be able to complete an assignment on time, please try contact Marina **as soon as possible before** the scheduled due date. I am always in your corner, but I can best support you if you contact me within a reasonable amount of time of any disruption to your semester happening. If an unwelcome event happens I understand that you may not feel comfortable sharing details depending on the nature of the event, however, I do need some idea as to what is going on to make an informed judgement on how to best handle the situation. For a university-scheduled conflict (i.e., sporting event) please provide signed documentation as required by university policy.

Academic and Professional Integrity

- **First and most importantly, if you are thinking about cheating, plagiarizing, or committing academic dishonesty in another form I invite you to have a conversation with me about why you might be in that situation. I would rather grant you an extension or come up with a solution together than have to follow university policies and report academic dishonesty.** Your enrollment in at CSUSM and in this class signifies your commitment to learning and continual growth and I am committed to helping you achieve your educational goals. To do this, we must work together to ensure you are learning and developing critical skills to develop academically, professionally, and individually. Whether or not it is always immediately evident, I have designed this course to provide knowledge and skills that you can apply to not only do well in the classroom, but also in the real world. To get the most out of this course I expect that all the work you submit will be your own and/or attributed to others appropriately (i.e., citations). If you are submitting work that is not your own you are not getting the most out of this class or your education.
 - Please familiarize yourself with CSUSM's [Standards for Student Conduct](#). You can also find [frequently asked questions](#).
 - I will encourage a lot of collaboration and sharing of ideas and knowledge throughout the semester; however, all the work you submit for this course should be your own and cited when appropriate.
 - There are many different types of academic misconduct, many of which may not be immediately clear. I encourage you to review [CSUSM's definition of academic misconduct](#).
 - You can find tips to avoid academic dishonesty [here](#). I am always willing to meet with you to discuss the course content, how to avoid academic dishonesty, and to help you find resources you may need to perform well in this class and others.
 - While I hope we will not have address academic dishonesty, disciplinary action may include the lowering of grades and/or the assignment of a failing grade for an exam, assignment, or the class as a whole. Incidents of Academic Dishonesty often have to be reported to the Dean of Students and sanctions at the University level may include suspension or expulsion from the university.

Statement on the Use of Artificial Intelligence

In this course, I prioritize the *originality* and *authenticity* of student work. I am focused is on nurturing individual thought processes, critical analysis, and personal expression. To uphold these academic values, **the use of generative artificial intelligence for completing assignments, exams, or any course-related tasks is strictly prohibited**. While I understand the challenges that come with academic writing, it's essential that the work submitted is *a true reflection of your own understanding and capabilities*. Therefore, while assistance from basic language improvement tools is allowed to refine grammar and spelling, these should be used solely as a means to enhance clarity and communication. Artificial intelligence tools should not replace or overshadow a student's

original thoughts and expressions.

Credit Hour Policy Statement

Campus policy states that students are expected to spend a minimum of two hours outside of the classroom each week for each unit of credit engaged in learning. As a 3-unit class, students should expect to spend a minimum of six hours each week outside of classroom time reading, writing, and preparing for class.

Mandated Reporting & Sexual Violence Resources

CSUSM is committed to fostering a campus community based on respect. To this end, we recognize that all CSUSM community members are responsible for helping to ensure that our community is free from harassment, discrimination, sexual misconduct, domestic violence, and stalking. In accordance with Title IX, CSUSM is legally obligated to respond to reported incidents of harassment, discrimination, sexual misconduct, domestic violence, and stalking. Faculty who become aware of an incident of harassment, discrimination, sexual misconduct, domestic violence, and stalking are required to notify CSUSM's Title IX Coordinator. I want to ensure you are aware of your reporting options and resources for support. For more information about your rights and reporting options at CSUSM, including confidential and anonymous reporting options, please visit <http://www.csusm.edu/title9/>

University Writing Requirement

The campus has a university writing requirement that specifies students must write at least 2,500 words per 3-unit class. Students will meet this requirement through *Unit Homework 1* and *the book report*.

Course Outline (Subject to Change):

Week	Dates	Topic (s)	Readings (Subject to Change)	Assignment DUE DATES
1	January 21 st - January 24 th	Syllabus overview & introduction What is epidemiology? Famous figures in epidemiology	Foundations of Epidemiology (Bovbjerg) - Chapter 1 Foundations of Epidemiology (Bovbjerg) - Appendix 1	Quiz 0 (Extra Credit)
2	January 27 th - January 31 st	Understanding exposures and outcomes The social determinants of health Social epidemiology	Braveman, P., & Gottlieb, L. (2014). The social determinants of health: it's time to consider the causes of the causes. <i>Public health reports</i> , 129(1_suppl2), 19-31. <i>Video</i> – Why the “wrong side of the tracks” is usually the east side of cities <i>Video</i> – Surgeon General discusses health risks of loneliness and steps to help connect with others	Quiz 1
3	February 3 rd - February 7 th	Finding scientific articles, tips for scientific writing Health disparities	Braveman, P. A., Kumanyika, S., Fielding, J., LaVeist, T., Borrell, L. N., Manderscheid, R., & Troutman, A. (2011). Health disparities and health equity: the issue is justice. <i>American journal of public health</i> , 101(S1), S149-S155.	Quiz 2
4	February 10 th -	Racism as a fundamental	Hammonds, E. M., & Reverby, S. M. (2019). Toward a historically informed analysis of racial health disparities since 1619. <i>American</i>	Quiz 3

	February 14th	cause of health Root causes & the role of policy	<i>journal of public health</i> , 109(10), 1348-1349. Geronimus, A. T., Hicken, M., Keene, D., & Bound, J. (2006). "Weathering" and age patterns of allostatic load scores among blacks and whites in the United States. <i>American journal of public health</i> , 96(5), 826-833. Jones, C. P. (2000). Levels of racism: a theoretic framework and a gardener's tale. <i>American journal of public health</i> , 90(8), 1212.	
5	February 18th-February 21st	Infectious disease epidemiology	Foundations of Epidemiology (Bovbjerg) - Chapter 3 Foundations of Epidemiology (Bovbjerg) - Chapter 11	Quiz 4
6	February 24th-February 28th	Behavioral epidemiology	Sallis, J. F., Owen, N., & Fotheringham, M. J. (2000). Behavioral epidemiology: a systematic framework to classify phases of research on health promotion and disease prevention. <i>Annals of behavioral medicine</i> , 22(4), 294-298.	Quiz 5 Unit 1 Homework
7	March 3rd-March 7th	How do we track disease and measure health?	Dobis, E. A., Stephens, H. M., Skidmore, M., & Goetz, S. J. (2020). Explaining the spatial variation in American life expectancy. <i>Social Science & Medicine</i> , 246, 112759.	Quiz 6
8	March 10th-March 14th	Measures of Disease Frequency	Foundations of Epidemiology (Bovbjerg) - Chapter 2	Quiz 7
9	March 17th-March 21st	Measures of Disease Association	Foundations of Epidemiology (Bovbjerg) - Chapter 4	Quiz 8
10	March 24th-March 28th	Causal Inference	Foundations of Epidemiology (Bovbjerg) - Chapter 10	Unit 2 Homework
Spring Break	March 31st-April 4th	Have a safe and fun spring break!		
11	April 7th-April 11th	Introduction to Epidemiologic Study Design Threats to Research	Foundations of Epidemiology (Bovbjerg) - Chapter 5 Foundations of Epidemiology (Bovbjerg) - Chapter 6 Foundations of Epidemiology (Bovbjerg) - Chapter 7 Foundations of Epidemiology (Bovbjerg) - Chapter 9	Quiz 9
12	April 14th-April 18th	Ecological & Cross-Sectional Studies	Appolon, G., Tang, S., Gabriel, N., Morales, J., Berenbrok, L. A., Guo, J., & Hernandez, I. (2023). Association Between Redlining and Spatial Access to Pharmacies. <i>JAMA Network Open</i> , 6(8), e2327315-e2327315. Willie, T. C., Kershaw, T., Perler, R., Caplon, A., Katague, M., & Sullivan, T. P. (2021). Associations between state intimate partner violence-related firearm policies and injuries among women and men who experience intimate partner violence. <i>Injury epidemiology</i> , 8(1), 1-10. Myers, W. P., Westenhouse, J. L., Flood, J., & Riley, L. W. (2006). An ecological study of tuberculosis transmission in California. <i>American journal of public health</i> , 96(4), 685-690.	Quiz 10
13	April 21st-April 25th	Case-Control Studies & Cohort Studies	Monin, J. K., McAvay, G., Zang, E., Vander Wyk, B., Carrión, C. I., & Allore, H. (2023). Associations between dementia staging, neuropsychiatric behavioral symptoms, and divorce or separation in late life: A case control study. <i>PLoS one</i> , 18(8), e0289311.	Quiz 11

			<p>Woodruff, S. I., Conway, T. L., Shillington, A. M., Clapp, J. D., Lemus, H., & Reed, M. B. (2010). Cigarette smoking and subsequent hospitalization in a cohort of young US Navy female recruits. <i>Nicotine & tobacco research</i>, 12(4), 365-373.</p> <p>Pacheco, L. S., Anderson, C. A., Lacey Jr, J. V., Giovannucci, E. L., Lemus, H., Araneta, M. R. G., ... & Martinez, M. E. (2019). Sugar-sweetened beverages and colorectal cancer risk in the California Teachers Study. <i>PloS one</i>, 14(10), e0223638.</p>	
14	April 28 th - May 1 st	Experimental Trials	<p>Dorans, K. S., Bazzano, L. A., Qi, L., He, H., Chen, J., Appel, L. J., ... & He, J. (2022). Effects of a low-carbohydrate dietary intervention on hemoglobin A1c: A randomized clinical trial. <i>JAMA network open</i>, 5(10), e2238645-e2238645.</p> <p>Kohn, J. N., Lobo, J. D., Troyer, E. A., Wilson, K. L., Ang, G., Walker, A. L., ... & Hong, S. (2023). Tai chi or health education for older adults with hypertension: effects on mental health and psychological resilience to COVID-19. <i>Aging & Mental Health</i>, 27(3), 496-504.</p>	Quiz 12
15	May 5 th - May 9 th	Kahoot! Exam Review		Unit 3 Homework Book Report
Finals	May 10 th - May 15 th	Final Exam		