



KINE 404: Introduction to Epidemiology

Fall 2019 – 3 units

Thursday 1:00pm-3:50pm

Markstein Hall 210

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Table of Contents

Course Description	1
Course Learning Outcomes	2
Textbook and Additional Resources.....	2
Course Evaluation/Requirements	2
Grade Composition	4
Course Policies and Expectations.....	4
Learning Differences, Access, and Accommodations ...	6
Diversity Statement	7
Course Outline (Subject to Change):	8
Reading List (Subject to Change).....	10

Your success in this class is extremely important to me. This course will consist of in-class lectures and activities, as well as at-home assignments and readings, that are designed to increase your 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](#) ([additional resources](#)) on campus, including the [Academic Success Center](#), [Writing Center](#), [Tutoring Center](#), and [Academic Advising Center](#).

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. Enrollment restricted to Kinesiology majors. **Prerequisites:** BIOL 104, 177, 178; KINE 202; **Corequisites:** KINE 303

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. Describe epidemiological approaches to defining and measuring health problems in defined populations.
5. Calculate various Epidemiologic measurements and understand their applications to determining risk of morbidity and mortality.
6. Identify research designs used in Epidemiology and demonstrate application of how studies are designed to solve Public Health problems.
7. Identify and understand the role of epidemiology in preventive medicine and disease investigation.
8. 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.
9. Learn ethical principles as they relate to conducting population health research.
10. Critically review and interpret peer-reviewed epidemiologic research studies.

Textbook and Additional Resources

1. Friis, Robert H. Epidemiology 101, 2nd edition. ISBN: 978-0763754433 (**Optional**)
2. Additional readings will be assigned on a per lecture basis; Preliminary reading list given at the end of syllabus and is subject to change
3. Cougar courses will be used to manage course content

Course Evaluation/Requirements

Course Format: Class activities and homework will provide students with the opportunity to critically think through epidemiological principles discussed in the previous lectures/activities by learning how to define a specific problem, organize known and unknown information, and develop an action plan. The structure of the course will enable the student to actively engage, analyze, and synthesize the material from lectures and apply principles to answering questions related to health topics. The class meets once per week (Thursday) for 2 hours and 50 minutes.

- **Class participation:** This class will be hands on and interactive to provide a meaningful exploration of Epidemiology. I hope you actively participate in this course as I have found this is the best way for you to engage you in the learning process.
- **Homework assignments**
 - Provide opportunities for students to practice concepts covered in class and complete problems similar to the exam questions.
 - Posted on Cougar Courses one week before the due date (see class schedule for tentative due dates)
 - Homework is due at the beginning of class on the posted date on the syllabus.
 - K2, D1, and S2: Homework assignments will explore several topics and require students to discuss social determinants of health, how structural racism affects health, and apply knowledge gained in class to develop solutions to address social justice, health equity, and health disparities.
- **In-Class activities**
 - A total of 8 in-class activities will be completed throughout the semester.

- In-class activities will include both group and individual work to allow time to practice concepts during class time.
- Dates for the in-class activities are listed in the syllabus and are subject to change. Please note there are more than 8 activities as not all are completed for credit.
- If a class is missed when an in-class activity is completed, a student is welcome to complete up to two in-class activities on their own for credit. Student missing more than two in-class activities should discuss their options with the me prior to missed activities.
- K2 and D1: In class activities will explore various topics including social determinants of health and health disparities/equity and will require students to apply knowledge learned in classes to case studies and discuss complex topics related to social justice.
- **Quizzes**
 - A total of 8 quizzes will be given throughout the semester.
 - Quizzes will either cover assigned reading and/or course material presented in class.
 - Readings will be assigned on a per lecture basis and at least 1 week in advance. Quizzes may cover assigned readings to ensure students are prepared to in class discussion on readings.
 - Quizzes will be short and are intended to ensure students are prepared for class discussions and exercises.
 - Up to two missed quizzes may be substituted with the grade obtained on the next quiz.
- **Writing Assignment**
 - The writing assignment will be submitted throughout the semester with the final submission being due the last week of class.
 - The writing assignment will consist of students evaluating, summarizing, and critiquing news reporting of health-related topics to understand how both good and bad information about health is spread.
 - Additional details about the assignment are provided on a separate document.
 - K2 and D1: The final project will require students to discuss how research and misinformation about research and research findings impacts underrepresented communities. It will require students to discuss how “fake news” leads to health issues in different communities. It will also require students to discuss social location and power dynamics impact health.
- **Health Disparities Presentation and Discussions**
 - Students will select one of the leading causes of disease as described in Healthy People 2020 (topics to be approved by instructor). Students will put together a 7-10 minute recorded presentation using a platform of their choice. Presentations should clearly answer two questions: (1) What do we know about disparities for this disease? and (2) What don't we know but need to know about disparities for this disease?
 - Students will also be required to post discussions on two other videos and respond to a minimum of two posts on their own video.
 - Additional details are provided on a separate document.
 - K1 and K2 will be met by students discussing how the health disparity arose and discussing how the health issue they chose affects different groups. S2 will be met by students discussing current and future solutions for change and addressing the health disparity.
- **Midterm and final exam**
 - Based on class lectures, exercises, activities, and assigned readings/media
 - The midterms and final will be timed, in-class exams that include calculations, multiple choice, and short answer questions. The final exam will be cumulative.
 - The exams will include a variety of questions on health disparities/health equity and social determinants of health. At least one question will be a short answer response about how health disparities arise.

In-Class Student Response System

This class will utilize Kahoot! as a student response system. Kahoot! is a game-based response platform that will be used in a similar fashion to using iClickers. One of the benefits of Kahoot! is that students can use their cell phone or computer to respond to in-class questions.

- Kahoot! can be downloaded on your smartphone by searching “Kahoot” in the Apple App Store or the Android Play Store. If you do not want to download the app to your phone you can also participate by going to www.kahoot.it.
- To participate in an in-class activity you will need to enter a game pin, which will be provided at the beginning of each session where Kahoot! will be used. Once you enter the game pin you will be able to respond to questions.
- If using your smartphone, please set your screen time out to > 5 minutes.

Grade Composition

Assessment	Number	Value (each)	Total Points
Homework assignments	6	20	120
In-class exercises	8	5	40
Quizzes (reading and/or course material)	8	5	40
Writing assignment	1	80	80
Health disparities presentation and discussion responses	1	80	80
Midterm	1	100	100
Final exam (cumulative)	1	120	120
Total	--	--	580

- **Grading policy**
 - 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 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.
 - Grades are not be curved or rounded.

- **Final letter grade criteria (points)**

A	B	C	D	F	Pass/Fail
A = ≥539	B+ = 510-521.99 B = 481-509.99	C+ = 452-445.99 C = 423-451.99	D = 348-405.99	F = ≤347.99	Pass = ≥423
A- = 522-538.99	B- = 446-480.88	C- = 406-422.99			

Course Policies and Expectations

- Attendance is crucial for success in this class as the class will include discussions and activities that are meant to help you under the material. I understand that students have many responsibilities that might mean you have to miss class occasionally, if that is the case please notify the instructor as soon as your are able. Students should also obtain missed class information from a classmate or from the professor as soon as possible so they do not fall behind on material.
- Assignments are to be submitted on the due date posted at the beginning of class. You are allowed to ask for extensions but they may not always be granted depending on the circumstances.
- Make-up examinations are generally not given without prior approval; If you must miss a midterm exam or the final, please try to contact Dr. Armenta **at least 1-week prior** to the scheduled exam. Traumatic events are unwelcome and because I understand how difficult these times can be, if you contact me within 24 hours of the event (or a reasonable time depending on the event) and

provide documentation, I will be happy to give a make-up exam. 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.

- University-scheduled conflict (i.e., sporting event): signed documentation on letterhead from university faculty/staff
- Personal event: written documentation from doctor or parent, plane ticket, or other documentation accepted at the discretion of the instructor when needed
- Respect individual diversity of each person in class
- Professional and courteous email communication
- Respectful attitude towards peers, guest speakers, and course instructor
- All students are always allowed to use the bathroom, get drinks of water, eat snack/food, or take breaks outside the classroom at any time without needing to ask permission. Please take steps to limit disruptions from these activities.
- If you are responsible for childcare, you are welcome to bring your children to class with you.
- All students are allowed to use technology and devices in the classroom at any time, including cell phones. My requirements are that (a) you set your devices to silent or vibrate-only during class time; (b) you don't intentionally open any visuals that contain sudden or rapid flashing, since these can cause potentially fatal seizures, migraines, and sensory overload; and (c) if you plan or expect to use a device for a non-traditionally academic/classroom purpose, you sit on the sides or back of the room to reduce chances of accidentally distracting someone else. (You can step outside to take calls if needed.)
- Academic and professional integrity:
 - Please save everyone the trouble and don't attempt, it is not worth your time. All work submitted must be your own and any student caught cheating or plagiarizing will face academic consequences. The instructor reserves the right to discipline any student for academic dishonesty, in accordance with the general rules and regulations of the university, which can be found here: <https://www.csusm.edu/dos/studres/conductprocessfaq.html> 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 will be reported to the Dean of Students. Sanctions at the University level may include suspension or expulsion from the university. If in doubt, you are encouraged to review guidelines for the proper use of sources, as well as CSUSM policy on plagiarism and other forms of academic misconduct. It is your responsibility to know what constitutes academic misconduct at CSUSM. CSUSM's definition of academic misconduct can found here: https://www.csusm.edu/policies/active/documents/academic_honesty_policy.html. Tips on avoiding cheating can be found at: <https://www.csusm.edu/dos/studres/cheating.html>. Students are responsible for honest completion of their work including examinations.
 - If you suspect another student of academic misconduct, you are strongly encouraged to report it to the instructor.
 - Sources (ideas, quotations, and paraphrases) must be properly acknowledged and documented.
 - When enrolled in this course, all submitted writings may be reviewed using software for the detection of plagiarism. If you request that your writings not be submitted to a database for the detection of plagiarism, you will be required to provide documentation to substantiate that what you have written is your original work and does not include plagiarized material.

Per the University Credit Hour Policy: Courses with face-to-face instruction (including activity and laboratory modes of instruction) must include a statement to the effect 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. (Note that for courses with a “lecture” mode of instruction over an entire semester, each unit of credit corresponds to an ‘hour’ of class-time and two hours of student learning outside of class.

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.

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 professor if you are comfortable in doing so. This will enable me to provide any resources that I may possess.

Office hours and availability

Office hours are meant for you and are a dedicated time that I am in my office to meet about whatever you would like to without the need to make an appointment. 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. You do not need to e-mail me to let me know you are coming to office hours, but you may need to wait to see me if other students also attend. In addition to face-to-face office hours, I am also available by email, phone, and Zoom/Skype to talk remotely. My goal is to respond to emails within 24 hours; if you don’t hear back from me in that time please follow-up as it likely means I somehow missed your message.

Diversity Statement

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, we may discuss difficult and complex topics and I welcome and value all perspective. All members of this class are expected to contribute to a respectful, welcoming and inclusive environment for every other member of the class. 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 have a preferred set of pronouns or name that is different from what appears in your official record, please let me know as soon as possible.
- 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. Anything you share with me will be kept confidential and anonymous. I can also point you to outside help if that is preferred.
- As many are, I am still learning about diverse perspectives and identities and continue to seek new knowledge and perspectives. If I or anyone else in the class says something that makes you feel uncomfortable, please talk to me about it.

Course Outline (Subject to Change):

Week	Day	Date	Topic (s)	Readings	In Class Activity	Due
1	Th	08/29	Introduction to Course; Definition and History of Epidemiology <i>K1: Discussion of racism, discrimination, and hate as public health issues</i>	Friis Ch 1	Reading and Critiquing Epidemiologic Research	
2	Th	09/05	Measuring Health and Disease Frequency <i>K1 and D2: Introduce distribution of health condition in different groups (i.e., race/ethnicity, sexual minorities, disabilities)</i>	Friis Ch 2-3	Measuring Health and Disease Exercise SDoH Exercise <i>D2 and S2: Students will discuss communities where they grew up and the "ideal" community. Will engage in conversation about advocating for "healthier" communities and health equity.</i>	
3	Th	09/12	Social and Behavioral Epidemiology; Social Determinants of Health; Health Disparities and Health Equity <i>D2: Discuss how where people live, work, play affect health. Discuss structural inequality. D1: Examine how health disparities arise and improving health equity</i>	Friis Ch 9	Where do people get health information? <i>S2: Interactive discussions on advocating for health care information, access, and appropriate care; How does culture impact health?</i>	HW 1
4	Th	09/19	Causal Inference	Friis Ch 5	Causal Inference; Causal Pie Bingo	
5	Th	09/26	Descriptive Epidemiology: Ecological and Cross-Sectional Studies	Friis Ch 4 & 6	Study Design Exercise 1 <i>K1 and S1: Readings, evaluation and discussion of research on social determinants of health.</i>	HW 2
6	Th	10/03	Analytic Epidemiology: Case Control and Cohort Studies	Friis Ch 6	Study Design Exercise 2 <i>K1 and S1: Discuss methods to conduct studies to better understand social determinants of health and methods to address these issues to improve health.</i>	HW 3
7	Th	10/10	Midterm Review			Writing Assgn Part I; HW 4
8	Th	10/17	Midterm Exam			
9	Th	10/24	Analytic Epidemiology: Experimental Studies	Friis Ch 6	Study Design Exercise 3 <i>S2: Discuss how who participated in clinical trials impacts outcomes</i>	
10	Th	10/31	Online Lecture: Infectious Disease	Friis Ch 8	Vaccine Hesitancy	Health

			Epidemiology; Outbreak Investigations K1 and D1: Discuss HIV epidemic and how oppression, discrimination, and stigma impacted epidemic, especially among LGBTQ+ and people of color.	S2 and D1: Discuss how vaccine misinformation and hesitancy affects health and health disparities	Disparities Presentation
11	Th	11/07	Threats to research: Bias and Error; Confounding and Interaction	Confounding Exercise S2: Exercise-Unconscious bias and its effect on health	HW 5
12	Th	11/14	Screening and Surveillance	Screening Exercise	Health Disparities Discussion Posts
13	Th	11/21	Physical Activity Epidemiology	Physical Activity Exercise S2: Advocating for opportunities for people with disabilities to engage in physical activity.	HW 6; Writing Assgn Part II
14	Th	11/28	NO CLASS: THANKSGIVING		
15	Th	12/05	Course Wrap Up/Final Exam Review		Writing Assgn Part III
16	Th	12/12	FINAL EXAM; 1:45-3:45pm		

Reading List (Subject to Change)

Due Date Reading

- 09/05** • Gee, G. C., Walsemann, K. M., & Brondolo, E. (2012). A life course perspective on how racism may be related to health inequities. *American Journal of Public Health, 102*(5), 967-974.
- 09/12** • Walker, R. J., Williams, J. S., & Egede, L. E. (2016). Influence of race, ethnicity and social determinants of health on diabetes outcomes. *The American journal of the medical sciences, 351*(4), 366-373.
- 09/19** • Marquez, I., Calman, N., & Crump, C. (2019). A Framework for Addressing Diabetes-Related Disparities in US Latino Populations. *Journal of community health, 44*(2), 412-422.
- 09/19** • Braveman, P., & Gottlieb, L. (2014). The social determinants of health: it's time to consider the causes of the causes. *Public health reports, 129*(1_suppl2), 19-31.
- 09/26** • Portnov, B. A., Stevens, R. G., Samociuk, H., Wakefield, D., & Gregorio, D. I. (2016). Light at night and breast cancer incidence in Connecticut: an ecological study of age group effects. *Science of The Total Environment, 572*, 1020-1024.
- 09/26** • Sallis, J. F., Cerin, E., Conway, T. L., Adams, M. A., Frank, L. D., Pratt, M., ... & Davey, R. (2016). Physical activity in relation to urban environments in 14 cities worldwide: a cross-sectional study. *The Lancet, 387*(10034), 2207-2217.
- 10/03** • Sabia, S., Dugravot, A., Dartigues, J. F., Abell, J., Elbaz, A., Kivimäki, M., & Singh-Manoux, A. (2017). Physical activity, cognitive decline, and risk of dementia: 28 year follow-up of Whitehall II cohort study. *bmj, 357*, j2709.
- 10/24** • Aggio, D., Papacosta, O., Lennon, L., Whincup, P., Wannamethee, G., & Jefferis, B. J. (2017). Association between physical activity levels in mid-life with physical activity in old age: a 20-year tracking study in a prospective cohort. *BMJ open, 7*(8), e017378.
- 10/31** • Arnold, E. A., Rebchook, G. M., & Kegeles, S. M. (2014). 'Triply cursed': racism, homophobia and HIV-related stigma are barriers to regular HIV testing, treatment adherence and disclosure among young Black gay men. *Culture, health & sexuality, 16*(6), 710-722.
- 10/31** • https://www.huffpost.com/entry/opinion-wilson-black-aids_n_5a7a530de4b06505b4e9244b
- 11/14** • Kim, K., Choi, J. S., Choi, E., Nieman, C. L., Joo, J. H., Lin, F. R., ... & Han, H. R. (2016). Effects of community-based health worker interventions to improve chronic disease management and care among vulnerable populations: a systematic review. *American journal of public health, 106*(4), e3-e28.
- 11/21** • Mereish, E. H., & Poteat, V. P. (2015). Let's get physical: sexual orientation disparities in physical activity, sports involvement, and obesity among a population-based sample of adolescents. *American journal of public health, 105*(9), 1842-1848.
- 11/21** • Taylor, W. C. (2015). Disparities in Physical Activity Among Low-Income and Racial/Ethnic Minority Communities: What Can We Do?. *Health, 4*(1), s50-s63.