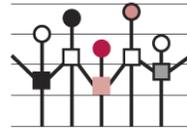




University of Wisconsin
**SCHOOL OF MEDICINE
AND PUBLIC HEALTH**



**Population
Health
Sciences**

**PHS 797 Introduction to Epidemiology (3 credits)
September 5 to December 18, 2018**

COURSE DESCRIPTION

Epidemiology has been described as the “basic science” of public health. Historically, epidemiology has been the practice of identifying causes of disease. Fundamentally, epidemiology is the study of cause and effect as it relates to health. This course is designed to present relevant problems in human health and provide the methods and techniques necessary to solve them.

COURSE FORMAT AND LOCATION

Canvas Course URL: <https://canvas.wisc.edu/courses/115912>.

Course Designation: General education.

Instructional Mode: The course has both online and in-person components (i.e., blended).

Meeting Time and Location: Classes are held on Tuesdays and Thursdays, 5:30 to 6:45 PM. In-person lectures and in-class exams will be held in Room 1345 of the Health Sciences Learning Center (HSLC; 750 Highland Ave). Laboratory sessions will be held in 1331 Signe Skott Cooper Hall (701 Highland Ave). Please see the schedule for specific dates and locations.

How Credit Hours are met by the Course: 45 Hours Per Credit – One credit is the learning that takes place in at least 45 hours of learning activities, which include time in lectures or class meetings, in person or online, labs, exams, presentations, tutorials, reading, writing, studying, preparation for any of these activities, and any other learning activities.

Course prerequisites: Graduate or professional student standing

COURSE INSTRUCTORS AND TEACHING ASSISTANTS

Course Instructor: Ajay K. Sethi, PhD, MHS
 Associate Professor
 Department of Population Health Sciences
 Room 601 WARF
 608-263-1756
ajay.sethi@wisc.edu

Instructor office hours: Please email the instructor to arrange for an individual appointment. The instructor will also be available 30 minutes before and after lectures (HSLC atrium) and lab sessions (1331 Cooper Hall) to meet with you.

Teaching Assistants:

Mitch Arnold MPH student UW-Madison mtarnold@wisc.edu	Christian Schmidt MS Student Epidemiology cwschmidt@wisc.edu
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TA office hours: Please email the TAs to arrange for an individual appointment. The TAs will also be available 30 minutes before and after lectures (HSLC atrium) and lab sessions (1331 Cooper Hall) to meet with you. You may also post any questions you have on the online discussion board on Canvas; one of the TAs or course instructor will respond within 36 hours.

Laboratory Faculty:

Marty Kanarek, PhD, MPH Professor Population Health Sciences kanarek@wisc.edu	Ajay Sethi, PhD, MHS Associate Professor Population Health Sciences
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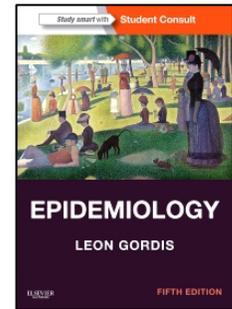
Guest Lecturers:

Corinne Engelman, PhD, MSPH Associate Professor Population Health Sciences corinne.engelman@wisc.edu	Kristen Malecki, PhD, MPH Assistant Professor Population Health Sciences kmalecki@wisc.edu
Amy Trentham-Dietz, PhD Professor Population Health Sciences trentham@wisc.edu	

TEXTBOOK

The required text for the course is *Epidemiology* (5th Edition) by Leon Gordis; 2013 Saunders (Philadelphia, PA); ISBN: 978-1-4557-3733-8.

An online version of the book is available for free via the University's access to ClinicalKey (<https://search.library.wisc.edu/catalog/9911112538502121>)



LEARNING OUTCOMES

By the end of the course, you will be able to:

1. Identify the major causes of mortality and morbidity in the U.S.
2. Describe important variations in disease frequency according to person, place and time
3. Calculate and interpret measures of disease frequency
4. Identify the features of epidemiologic study designs, and describe their strengths and limitations
5. Compute and interpret measures of association between a risk factor and a health outcome
6. Evaluate causal inferences between risk factors and health
7. Describe major sources of bias and confounding in epidemiologic research, and how they can be addressed
8. Identify and interpret the presence of interaction (effect modification) between multiple risk factors in relation to an outcome
9. Read and critically review scientific literature and synthesize findings across studies
10. Define and interpret basic terms and methods used in the epidemiology of infectious diseases, chronic diseases, environmental epidemiology, and genetic epidemiology

Please see Canvas for module-specific learning objectives

ASSESSMENT AND GRADING

Your course grade will be based on your performance on 17 online module quizzes, six laboratory exercise assignments, and two exams. The determination of your course grade and the distribution of points by assessment will be as follows:

Total points	Grade	Proportion	Item
93.0 – 100.0	A	25%	Exam 1
87.0 – 92.9	AB	25%	Exam 2
80.0 – 86.9	B	25%	Laboratory exercises (N=6)
77.0 – 79.9	BC	25%	Online module quizzes (N=17)
70.0 – 76.9	C		
60.0 – 69.9	D		
<60.0	F		

Note: If the categories above were to change, it would be adjusted in your favor.

EXAMS AND QUIZZES

Exams 1 and 2: There are two exams in this course that each count 25% towards your course grade. Exam 1 will be given on October 16 and Exam 2 will be given on December 11. Both exams will be administered in Room 1345 HSLC. Exam 2 is not explicitly cumulative; however, concepts taught in the second half of the course build upon content taught in the first half. Both exams are multiple choice and closed book. Calculators are permitted; smartphones are not. If for a legitimate reason you are unable to take the exam on the dates specified, please email the course instructor as soon as possible to arrange for a make-up date.

Optional Cumulative Final Exam: An optional final exam will be held on December 18, 5:30 to 6:45 PM in 1345 HSLC. The exam will be multiple choice and closed book. Calculators are permitted; smartphones are not. The optional cumulative final exam is not required. However, you may take it to improve your overall course grade, if desired and applicable. Your score on the optional cumulative final exam will substitute the lower of your Exam 1 and Exam 2 scores, regardless of your performance on the final exam. So, theoretically, your overall course grade could decrease after taking the optional cumulative final. Please feel free to consult the course instructor if you have questions about this.

Online module quizzes: Online module quizzes count 25% towards your overall course grade. They serve as self-assessments and many are representative of the kinds of questions that you will see on Exam 1 and Exam 2 (and the optional final). Quizzes are auto-graded on Canvas and given a due date/time of Tuesdays at midnight, which is not strictly enforced. You may take the quizzes multiple times, and only the highest score will be recorded in the grade book. You may also complete them after the specified due date without penalty.

LABORATORY EXERCISES

Laboratory exercises are your opportunity to apply concepts you learn in lectures and readings. Exercises are to be completed on your own and in groups during the lab sessions. For each laboratory exercise, you will be required to turn in responses to select questions for an individual grade. This course has the following six exercises integrated into the course schedule:

1. Investigation of an Acute Outbreak
2. Assessing the Health of a Community
3. Diagnostic and Screening Tests
4. Epidemiologic Study Design and Analysis
5. Causal Inference
6. Epidemiology and Policy

For laboratory exercises, most questions will be completed and discussed during instructor-guided laboratory sessions. However, you will be required to turn in individual responses to select question for grading by the TAs. Due dates for laboratory exercise assignments are provided on Canvas and are strictly enforced. In fairness to students who turn in their lab exercises on time, any assignment handed in late will be assessed a penalty of 20% for each 24-hour period following the deadline. Thus, if you turn a lab exercise 0-24 hours late, the maximum grade you can receive on that exercise is 80%; if you turn it in 24-48 hours late, the maximum is 60%; 48-72 hours late, the maximum is 40%; and if 72-96 hours late, the maximum is 20%. Lab exercises will not be accepted after four days (96 hours) from the specified due date and time. This may be waived in advance for valid reasons. Please email the Teaching Assistants to document your request and, if applicable, to decide on a mutually agreed upon due date.

ABSENCES

Attendance is not recorded during the course. If you are unable to attend in-person lectures, they will be video captured and made available 24-48 hours after lecture at the SMPH Video Library (<https://videos.med.wisc.edu/>; NETID required). In rare instances, due to uncontrollable circumstances, lectures are unsuccessfully recorded. Laboratory sessions are not video captured. You are strongly encouraged to attend every laboratory session.

RULES, RIGHTS & RESPONSIBILITIES

See the Guide's [Rules, Rights and Responsibilities](#)

ACADEMIC INTEGRITY

Please read the University of Wisconsin standards of academic honesty and integrity (<http://students.wisc.edu/saja/misconduct/UWS14.html>). The expectations for this course are consonant with those of the University. By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for additional review.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

McBurney Disability Resource Center syllabus statement: "The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA."

<http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>

DIVERSITY & INCLUSION

Institutional statement on diversity: "Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals.

The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.” <https://diversity.wisc.edu/>

NON-DISCRIMINATION POLICY

The UW-Madison is committed to creating a dynamic, diverse and welcoming learning environment for all students and has a non-discrimination policy that reflects this philosophy. Disrespectful behaviors or comments addressed towards any group or individual, regardless of race/ethnicity, sexuality, gender, religion, ability, or any other difference is deemed unacceptable in this class, and will be addressed publicly by the professor.

COURSE SCHEDULE

Period	Content	In-person Meeting Dates & locations
09/06 to 09/12	Text: Gordis Chapters 1 and 2	
	Lecture: Introduction to epidemiology (Sethi)	09/06: 1345 HSLC
	L@UW: Disease transmission	
	Lab: Lab 1	09/11: 1331 CH
09/13 to 09/19	Text: Gordis Chapter 2	
	L@UW: Outbreak investigation	
	L@UW: Surveillance	
	Lab: Lab 1	09/18: 1331 CH
09/20 to 09/26	Text: Gordis Chapters 3 and 4	
	L@UW: Measures of morbidity	
	L@UW: Measures of mortality	
	Lab: Lab 2	09/25: 1331 CH
09/27 to 10/03	Text: Gordis Chapter 4	
	Lecture: Descriptive epidemiology (Sethi)	09/27: 1345 HSLC
	L@UW: Comparing mortality in different populations	
	Lab: Lab 2	10/02: 1331 CH
10/04 to 10/10	Text: Gordis Chapters 5 and 6	
	L@UW: Diagnostic and screening tests	
	L@UW: Natural history of disease	
	Lab: Lab 3	10/09: 1331 CH
10/11 to 10/17	Text: Gordis Chapter 14	
	Lecture: Causal inference (Sethi)	10/11: 1345 HSLC
	Exam: Exam 1	10/16: 1345 HSLC

COURSE SCHEDULE (continued)

Period	Content	In-person Meeting Dates & locations
10/18 to 10/24	Text: Gordis Chapters 7, 8, 9, 11	
	L@UW: Experimental studies	
	L@UW: Cohort studies	
	Lab: Exam 1 review (optional)	10/23: 1331 CH
10/25 to 10/31	Text: Gordis Chapters 10, 11, 13	
	L@UW: Case-control studies	
	L@UW: Cross-sectional & other study designs	
	Lab: Lab 4	10/30: 1331 CH
11/01 to 11/07	Text: Gordis Chapter 17	
	Lecture: Summary of epidemiologic study designs (Sethi)	11/01: 1345 HSLC
	L@UW: Epidemiology to evaluate health services	
	Lab: Lab 4 group discussion	11/06: 1331 CH
11/08 to 11/14	Text: Gordis Chapters 12 and 16	
	Lecture: Genetic epidemiology (Engelman)	11/08: 1345 HSLC
	L@UW: Estimating risk and potential for prevention	
	Lab: Lab 5	11/13: 1331 CH
11/15 to 11/21	Text: Gordis Chapters 15 and 16	
	Lecture: Environmental epidemiology (Malecki)	11/15: 1345 HSLC
	L@UW: Bias	
	Lab: Lab 5	11/20: 1331 CH
11/22 to 11/28	Text: Gordis Chapter 15	
	L@UW: Confounding	
	Lab: Lab 6	11/27: 1331 CH
11/29 to 12/05	Text: Gordis Chapters 15, 18	
	Lecture: Evaluation of screening programs (Trentham)	11/29: 1345 HSLC
	L@UW: Interaction	
	Lab: Lab 6	12/04: 1331 CH
12/06 to 12/12	Text: Gordis Chapters 19, 20	
	Lecture: Course wrap-up and looking ahead	12/06: 1345 HSLC
	Exam: Exam 2	12/11: 1345 HSLC
12/13 to 12/19	Exam: Optional Final Exam	12/18: 1345 HSLC