University of Maryland College Park
School of Public Health

EPIB 301 – Epidemiology for Public Health Practice

Semester:	Fall 2016
Instructor:	Dr. Natalie Slopen
Office Hours:	By appointment
Office:	2234DD SPH
Phone:	301-405-6589
Email:	nslopen@umd.edu
Classroom:	CHE 2110
Time:	T, TH, 2:00 -2:50 PM

Teaching Assistants:	Alli Hanley	Xiaoxiao Lu	Jonathan Maa
E-mail:	ahanley@umd.edu	xxlu@umd.edu	jmaa1@umd.edu
Office hours:	T, 12:30-1:30 pm	By appointment	F, 10:30 am -12:30 pm
Location:	Hornbake Library	TBA	SPH 1227

Course Time and Location:
The course lectures are held on Tuesdays and Thursday from 2:00 p.m. to 2:50 p.m. in CHE 2110 on the UMD College Park campus. Most weeks, the class will break into smaller discussion sections led by Section Instructors in separate rooms (see below for more details). You can find your section assignment on Canvas.

Monday: 10-10:50 AM (location: PLS 1172)
Monday: 2-2:50 PM (location: EGR 3114)
Wednesday: 2-2:50 PM (location: BPS 0283)
Wednesday: 3-3:50 PM (location: PLS 1117)
Friday: 10-10:50 AM (location: BPS 1236)

Discussion Sections
All students are enrolled in a Discussion section. Attendance will be taken, and this will be part of your final grade in the course. *To receive full credit, you must arrive on time in the classroom for the section in which you're registered and participate actively for the duration of section with your small group and the larger class.* For each session, your Teaching Assistant will record whether you were on time and whether you participated actively throughout the entire session.

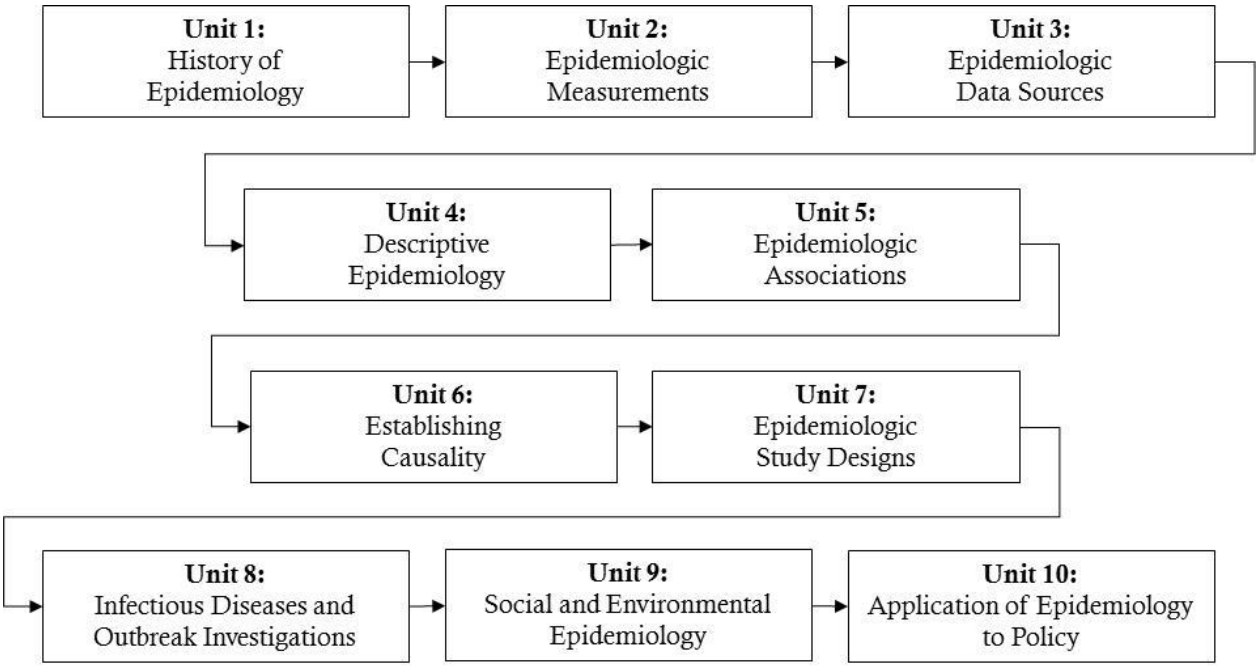
Course Pre- and Co-requisites:
Required: Everyone should have completed, or be concurrently enrolled in, an introductory statistics class such as EPIB300 or HLTH300. Please contact the instructor if you have any questions about whether your statistics background is sufficient.

Course Description:

Epidemiology—the fundamental science underlying public health—is the study of the distribution and determinants of health and diseases at the population-level, including infectious and chronic diseases, mental disorders, community and environmental health hazards, and unintentional injuries. In contrast to medicine, which is the study of health at the individual level, epidemiology looks at the causes and outcomes of disease and health in groups of people. This course will introduce students to basic epidemiologic methods, and the application of epidemiologic research to public health practice. The subject matter is applicable to a variety of fields, such as health

promotion, medicine and other health professions, communication, education, psychology, environmental health, sociology, and social work. The goal of the course is to enable students to become informed and intelligent consumers of epidemiologic literature and to provide a basis for further studies and careers in public health sciences and other related fields.

EPIB301 is structured around 10 learning units. Some units will take just one lecture session, others will take several weeks. Each course concept builds on the next and requires students to be actively engaged in readings, discussions, and lecture, as well as careful critical thinking, and participation in-class and on assignments. The weekly Sections portion of this course will focus on the practical applications of the course material, and opportunities for more in-depth discussion than possible during the large format lectures.



Course Learning Objectives:
Upon completing this course, the student will be able to:

1. Discuss the epidemiologic or population perspective used in the study of health and disease;
2. Discuss the feasibility, strengths, and limitations of different study designs;
3. Identify key sources of epidemiologic data;
4. Define measures of disease occurrence including incidence, prevalence, morbidity and mortality;
5. Describe the distribution of disease in terms of person, place, and time;
6. Define measures of association including odds ratios and relative risk and describe concepts such as effect modification and confounding;
7. Discuss criteria for causality;
8. Discuss models of the natural history of disease;
9. Critically review published epidemiologic studies and assess their validity and generalizability;
10. Describe ethical issues regarding research and evaluation;
11. Understand the place of epidemiology in disease prevention and health promotion;
12. Apply epidemiologic principles to evaluate the impact of environmental sustainability initiatives on human behavior and health.

Program Competencies Addressed in this Course:
The following competencies for the Public Health Science Program are addressed in this course:

1. Identify and describe core scientific concepts underlying disease prevention, environmental protection, and health promotion;
2. Identify and define public health problems from an ecological and interdisciplinary perspective;
3. Synthesize scientific knowledge to formulate solutions to public health problems.

Required Text:

Required: Friis R.H. (2010). *Epidemiology 101*: Essential Public Health Series. Sudbury, MA: Jones and Bartlett Publishers, Inc. ISBN: 9780763754433. This book is on reserve at McKeldin Library. The textbook has a companion website, located at: http://www.jbpub.com/catalog/9780763754433 Additional readings will be available in class or on the class website on Canvas. Students are expected to read the assigned readings and participate in class discussions.

Required Technology and Other Materials:

A basic calculator should be brought to each class—calculators on cell phones or laptops cannot be used for tests or exams.

Course Communication:
The instructor will communicate with students via e-mail regarding class cancellation, room change, or other timely announcements.

Course Requirements and Expectations:

1. **Reading.** In order to be prepared to participate in class discussions, students are required to complete the reading assignments before attending class. Lectures will not necessarily cover all materials included in the reading assignments.
2. **Attendance and Participation.** Attending lectures and sections is necessary in order to do well. Exams are based on class material as well as assigned readings. I expect every student to attend every session. If you must miss a lecture or section, please let us know in advance. Participation is important to learning, and I encourage active participation; if you have a question, it's likely that other students do as well. Please attend office hours or schedule an appointment with the instructor or Teaching Assistant if you are having trouble with the concepts and/or assignments.
3. **Course Website.** The syllabus, PowerPoint slides and other course materials will be posted on the EPIB301 Canvas website: http://elms.umd.edu/. I'll place each session's PowerPoint presentation on the Canvas website the morning of the day it will be used. You will upload your assignments to the Canvas site, and complete the homework questions via Canvas as well.

Evaluation:

Students' mastery of the course content will be assessed via homework, tests, assignments, and a final comprehensive exam.

1. **Online Homework Questions – 12%.** Three sets of homework questions (4% each) will be assigned (1-10 questions per assignment; multiple choice, matching, fill in the blank, short answer, or reflective responses). Homework questions will be posted at least one week before the due date and should be submitted via Canvas before midnight on the specified due date.
   Homework 1: Due September 13th
   Homework 2: Due October 13th
   Homework 3: Due November 3rd

2. **Tests and Exam – 55%.** Three in-class tests and one final examination will be given, worth a total of 55 points. The tests and exam will cover material from class and the assigned readings. The final exam will be cumulative. All tests will be closed-book though you may bring a calculator [not your phone]. You will be provided with a page of formulas to use during the test or exam (to be provided at least one week in advance). If you arrive late, you must complete the test or exam during the time allotted.
   Test 1: September 22nd (10%)
   Test 2: October 20th (10%)
   Test 3: November 22nd (10%)
   Comprehensive Final Exam: Saturday Dec. 17th , 10:30-12:30 PM (25%)
   Note
   If you have an average test score of 95% or better (on all three tests) and you are happy with your anticipated course grade, you do not have to take the cumulative final exam.

3. **Group Assignments – 18%.** Two assignments will be given over the course of the semester (specific guidelines will be provided in class).
   Assignment 1—County Health Rankings: Due Oct. 6th; instructions will be provided in Section the week of Sept. 19th (9%).
   Assignment 2—Epidemiology in the News: Due Nov. 10th; instructions will be provided in Sections the week of Oct. 24th (9%).

4. **Lecture Participation – 5%.** Over the course of the semester, there will be 5-10 opportunities for lecture participation (worth 0.5-1% per opportunity) in the form of short-answer response to a topic in class, a reflection on assigned readings, or other forms of participation. There will not be "make-up" opportunities for lecture participation, with the exception of medically-excused absences or emergencies.

5. **Section Participation – 10%.** Section participation will be based on contributions to group discussions and in-class exercises (8%), and submission of in-class exercise on outbreak disease investigation (2%).

Student Feedback for Improving the Course:
We are interested in your feedback as we proceed through the semester! You can communicate feedback regarding the course in person or over email to the instructor and/or TA. Thank you in advance for sharing your thoughts!

University Course Related Policies:

All University of Maryland-approved course policies are provided at the following website:

http://www.ugst.umd.edu/courserelatedpolicies.html

Policy descriptions, resources, and links to official policy documents are provided for:

Academic Integrity: What is cheating? What is plagiarism? What is the Honor Pledge?
Code of Student Conduct: What behavior is prohibited?
Sexual Misconduct: What to do in case of sexual harassment or sexual assault.
Discrimination: Procedures to prohibit discrimination, complaints about discrimination, harassment, and retaliation.
Accessibility: Information about disability support services (DSS) and accommodations.
Attendance, Absences, or Missed Assignments: The student must notify the instructor in a timely manner (typically first week of class). Read this prior to Schedule Adjustment date.
Student Rights Regarding Undergraduate Courses: What should I find in the course syllabus? Am I allowed to see my exams after they are graded?
Official UMD Communication: Use of email, communication with faculty, communication about cancelled class meetings, and weather-related or other urgent notifications.
Mid-Term Grades: Provided for 100 and 200 level courses, and all student athletes.
Complaints About Course Final Grades: Questions about course grades should first be addressed to the course instructor.
Copyright and Intellectual Property: Who owns the work that I produce in class?
Final Exams: Final exams are scheduled by the University.
Course Evaluations: The School of Public Health is committed to the use of student course evaluations for improving the student experience, course and curriculum delivery, and faculty instruction.
Campus Resources: ELMS, counseling, learning workshops, tutoring, writing help, questions about graduation, adding or dropping classes, withdrawing from the semester, etc.

Course Procedures and Policies:

a) Absence Policy: In accordance with University policy if you are absent for a single (1) lecture due to illness or some form of personal or family emergency, this absence will be considered "excused" and the instructor will accept a note from you attesting to the date of the illness/incident, along with an acknowledgement that the information is true. Whenever feasible, you should try to contact the instructor in advance. Multiple or prolonged absences, and absences that prevent attendance at a major scheduled grading event (like an exam or test) will require written documentation from an appropriate health care provider/organization. See: *http://www.president.umd.edu/policies/v100g.html*

b) Late homework questions and assignments: Extensions for homework and assignments will only be in the case of personal emergency (e.g., illness, death in the family), and illnesses will require appropriate documentation. If you find yourself in this position, please contact the instructor or TA **before the deadline** to discuss alternative arrangements.

c) Missed tests or exams: There are no makeups for tests or exams, with the exception of documented medical excuses or personal emergencies to be discussed in advance with the Instructor. If you are ill or need to reschedule a test or exam for some other reason, please notify the instructor **in advance** by email so arrangements can be made. Make-up tests or exams will be considered only

for those students who have a legitimate reason for absence and provide written documentation to substantiate their absence. Otherwise, no accommodation will be made, to be fair to all students.

d) Inclement Weather / University Closings / Emergency Procedures: In the event that the University has a delayed opening or is closed for an emergency or extended period of time, the instructor will communicate to students regarding schedule adjustments, including rescheduling of examinations and assignments due to inclement weather and campus emergencies.

e) Use of laptops, smartphones, or other communication devices: Place your cell phone on vibrate or turn it off, and limit use of smartphones, or other communication devices to legitimate classroom purposes (e.g., calculations). Texting during class time is not allowed except for emergencies. **Laptops may only be used for note-taking in class, and I encourage that you take notes by hand instead.** A student version of slides will be posted to the course website the morning of each class.

f) Potential changes to course schedule: There may be changes to the course schedule during the semester and some readings may be announced closer to the assigned dates. Updates will be announced in-class, via email and/or and posted to Canvas. It is your responsibility to keep track of updates, additions, and modifications to the schedule, topics, and assigned readings.

g) Grading Procedures:

Evaluation Summary	
Online Homework Questions #1 – #3 (4% each)	12%
Tests #1 – #3 (10% each)	30%
Cumulative final exam	25%
Group work assignments #1 - #2 (9% each)	18%
Participation (5% lecture, 10% section)	15%
TOTAL	100%

Course grade will be assigned as follows:

A+ 100 – 97 %	A 96.9 – 93 %	A- 92.9 – 90 %
B+ 89.9 – 87 %	B 86.9 – 83 %	B- 82.9 – 80 %
C+ 79.9 – 77 %	C 76.9 – 73 %	C- 72.9 – 70 %
D+ 69.9 – 67 %	D 66.9 – 63 %	D- 62.9 – 60 %
		F < 60 %

Course Outline / Course Calendar:

Note: Reading assignments due for each session are identified in Session Outline (below).

Course Schedule Summary

Week	Session	Date	Topic	Assignments (by midnight)
1	# 1	8/30	Course overview, introductions, history	
	# 2	9/1	History and uses of epidemiology	
	Section		*No section this week*	
2	# 3	9/6	Epidemiological measurements, Part I	
	# 4	9/8	Epidemiological measurements, Part II	
	Section		*Hands on practice: ratios, proportions, and rates*	
3	# 5	9/13	Data sources and surveillance	**HW #1 due**
	# 6	9/15	Descriptive epidemiology: person, place, time	
	Section		*Review for Test 1*	
4	# 7	9/20	Descriptive epidemiology: application to geographic health disparities (Guest: Dr. J. Moss)	
	# 8	9/22	**Test #1**	
	Section		*County Health Rankings assignment introduction & group work*	
5	# 9	9/27	Types of associations	
	# 10	9/29	Establishing causality in epidemiology	
	Section		*County Health Rankings group work*	
6	# 11	10/4	Ecological and cohort studies	
	# 12	10/6	Case control studies	**Assign. #1 due**
	Section		*Hands on practice: risk ratios, attributable risk, odds, odds ratio*	
7	# 13	10/11	Intervention/experimental studies	
	# 14	10/13	Ethics and epidemiology (Guest: Dr. M. Moser Jones)	**HW #2 due**
	Section		*Review for Test #2*	
8	#15	10/18	Challenges to validity and confounding	
	#16	10/20	**Test #2**	
	Section		*Ethics in epidemiology: discussion*	
9	# 17	10/25	Infectious disease epidemiology	
	#18	10/27	Outbreak investigation in practice	
	Section		*How to critique epidemiological studies; Epi in the Media assignment introduction & group work*	
10	# 19	11/1	Environmental epidemiology (Guest: Dr. R. Puett)	
	# 20	11/3	Community-based participatory research (Guest: Dr. S. Wilson)	**HW #3 due**
	Section		*Hands on practice: Infection disease outbreak investigation*	
11	# 21	11/8	Social and behavioral epidemiology	
	# 22	11/10	Epidemiology and sustainability: application to UMD	**Assign. #2 due**
	Section		*Epidemiology in the Media presentations*	
12	# 23	11/15	Health policy & Screening for disease	
	# 24	11/17	Screening test metrics / Review for Test #3	
	Section		*Study designs to evaluate sustainability interventions*	
13	# 25	11/22	**Test #3**	
		11/24	Thanksgiving	
	Section		*No section this week*	
14	# 26	11/29	Careers in epidemiology (Invited Panel)	
	# 27	12/1	Life course epidemiology	
	Section		*TBA*	
15	#28	12/6	Social networks and disease distribution (Guest: J. Guida)	
	#29	12/8	The future of epidemiology & course summary	
	Section		*Review for final exam*	

Course Schedule Summary			
Session	**Date**	**Topic**	**Assignments**
#1	Tuesday, Aug. 30th	**Course overview, introduction** Readings: none.	
#2	Thursday, Sept. 1st	**History and uses of epidemiology** Reading: Friis Chapter 1, p 1-22	
Learning Objectives: • The definition of *epidemiology* • Key characteristics of the discipline • Important figures in the history of epidemiology • The contemporary era of epidemiology • Describe uses of epidemiology (historical, community health, health services, risk assessment, disease causality) Program Competencies: 1, 2 Course objectives addressed: 1,11,12			
Week #1 Section		***No section this week***	
#3	Tuesday, Sept. 6th	**Epidemiologic measurements, Part I** Reading: Friis Chapter 2, p 25—32	
Learning Objectives: • Presentation of epidemiologic data • Mathematical terms used in epidemiology (count, ratio, proportion, percentage, rate) • Incidence and prevalence Program Competencies: 1,2 Course objectives addressed: 1,2,3,4			
#4	Thursday, Sept. 8th	**Epidemiologic measurements, Part II** Reading: Friis Chapter 2, p 32—41	
Learning Objectives: • Difference between incidence and prevalence • Epidemiologic measures related to morbidity and mortality (crude, specific, and adjusted rates; case fatality ratio; proportional mortality ratio) Program Competencies: 1,2 Course objectives addressed: 1,2,3,4			
Week #2 Section		***Hands on practice: ratios, proportions, and rates***	
#5	Tuesday, Sept. 13th	**Data sources and surveillance** Reading: Friis: Chapter 3, p 45—61 Krieger N, et al. (2015) Police Killings and Police Deaths Are Public Health Data and Can Be Counted. PLoS Med.	**HW #1 is due**
Learning Objectives: • Factors that affect the quality of epidemiologic data • Data sources that are used in epidemiologic research • Life expectancy • Death and birth rates Program Competencies: 1,2 Course objectives addressed: 1,2,3,4			
#6	Thursday, Sept. 15th	**Descriptive epidemiology: Patterns of disease—person, place, time** Reading: Friis Chapter 4, p 65—86	
Learning Objectives: • Define the term descriptive epidemiology			

• Types of descriptive epidemiologic studies and their uses • The process of epidemiologic inference in the context of descriptive epidemiology • Examples of person, place, and time variables and how they relate to the distribution of health outcomes Program Competencies: 1,2 Course objectives addressed: 1,2,3,5			
Week #3 Section		***Review for Test #1***	
#7	Tuesday, Sept. 20th	Descriptive epidemiology: application to geographic health disparities (Guest: Dr. Jennifer Moss, National Cancer Institute) Reading: • Sallis et al. Chapter 20 – Ecological Models of Health Behavior in Glanz et al. *Health Behavior and Health Education* • Chetty et al, The Association Between Income and Life Expectancy in the United States, 2001-2014, JAMA 2016	
Learning Objectives: • Describe how health is patterned by geographic characteristics Program Competencies: 1,2 Course objectives addressed: 1,2,3,5			
#8	Thursday, Sept. 22nd	**Test #1**	
Week #4 Section		***Descriptive Epidemiology: County Health Rankings group work assignment***	
#9	Tuesday, Sept. 27th	**Types of associations** Reading: Friis Chapter 5, p 89—97	
Learning Objectives: • Terminology for analytic epidemiology • Methods for displaying data graphically (scatter plots, contingency tables) • Epidemiological research strategies Program Competencies: 1,2 Course objectives addressed: 1,4,5			
#10	Thursday, Sept. 29th	**Establishing causality in epidemiology** Reading: Friis Chapter 5, p 98—101	
Learning Objectives: • Criteria of causality • Counterfactuals • How chance affects epidemiologic associations • How to rigorously evaluate whether the association observed suggests a causal association • Necessary and sufficient causes • Causes in time and space Program Competencies: 1,2,3 Course objectives addressed: 1,2,7			
Week #5 Section		***County Health Rankings Presentations***	
#11	Tuesday, Oct. 4th	**Ecological and cohort studies** Reading: Friis Chapter 6, p 105-110, 112-114 • Evens A, et al. 2015 "The impact of low-level lead toxicity on school performance among children in the Chicago Public Schools: a population-based retrospective cohort study."	

		• Hawthorne, 2015. "Studies link childhood lead exposure, violence crime". *Chicago Tribune*.	
Learning Objectives: • Characteristics that differentiate epidemiologic study designs • Ecologic studies • Cohort studies • Calculating relative risk and attributable risk within cohort studies Program Competencies: 1 Course objectives addressed: 1,2,3,6,7,9			
#12	Thursday, Oct. 6th	**Case-control studies** Reading: Friis Chapter 6, p 110—111 • Muscat JE et al. 2000 Handheld cellular telephone use and risk of brain cancer.	**Assign. #1 due**
Learning Objectives: • Characteristics of case-control studies • How to calculate odds ratios within case-control studies • How to decide between different observational design options Program Competencies: 1 Course objectives addressed: 1,2,3,6,7,9			
Week #6 Section		***Hands on practice: risk ratios, attributable risk, odds, odds ratios***	
#13	Tuesday, Oct. 11th	**Intervention/experimental studies** Reading: Friis Chapter 6, p 114—117 • Ebbeling CB, et al. 2012 "A Randomized Trial of Sugar-Sweetened Beverages and Adolescent Body Weight."	
Learning Objectives: • Describe experimental/intervention studies • Randomized controlled trials • Quasi-experimental designs • Appropriate uses of randomized controlled trials and quasi-experimental designs Program Competencies: 1 Course objectives addressed: 1,2,3,6,7,9			
#14	Thursday, Oct. 13th	**Ethics and epidemiology** Guest: Marian Moser Jones, PhD; UMD Department of Family Science Reading: TBA	**HW# 2 is due**
Learning Objectives: • Key principals of human subjects research • Key elements of informed consent • Ethical dilemmas faced by epidemiologists Program Competencies: 2,3 Course objectives addressed: 1,10			
Week #7 Section		**Review for Test #2**	
#15	Tuesday, Oct. 18th	**Challenges to validity and confounding** Reading: Friis Chapter 6, p 117—118 • Friis & Sellers, Chapter 10, p 435-449	
Learning Objectives: • Threats to validity of study designs (internal validity, bias; external validity, sampling error) • Definition and characteristics of confounding Program Competencies: 1 Course objectives addressed: 1,26,7			

#16	Thursday, Oct. 20th	**Test #2**	
Week #8 Section		***Ethics in epidemiology discussion***	
#17	Tuesday, Oct. 25th	**Infectious disease epidemiology** Reading: Friis Chapter 8, p 137—153 • Additional news articles: see course website Video (18 min): Going Viral: The Digital Future of Public Health | Rachel McKendry • https://youtu.be/vRK7KKQH9Ck	
Learning Objectives: • The "epidemiologic triangle" (agent, host, environment) • Modes of transmission of communicable diseases • Examples of significant infectious diseases Program Competencies: 1,2,3 Course objectives addressed: 1,2,4,5,7,8,11			
#18	Thursday, Oct. 27th	**Outbreak investigation in practice** Reading: Friis Chapter 8, p 154-156	
Learning Objectives: • Procedures for investigating infectious disease outbreaks Program Competencies: 2,3 Course objectives addressed: 1,2,4,5,7,8,11			
Week #9 Section		***How to read an epidemiology journal article; Epi in the Media assignment introduction & group work***	
#19	Tuesday, Nov. 1st	**Environmental epidemiology** Guest: Robin Puett, UMD Maryland Institute of Applied Environmental Health Reading: Friis Chapter 10, p. 184-186 • Others TBA	
Learning Objectives: • Define the term environmental epidemiology • Epidemiologic tools used in environmental epidemiology • Application of environmental epidemiology to understanding health disparities Program Competencies: 1,2,3 Course objectives addressed: 1,2,5,11,12			
#20	Thursday, Nov. 3rd	**Community based participatory research** Guest: Sacoby Wilson, UMD Maryland Institute of Applied Environmental Health Reading: • Wallerstein & Duran (2006). Using Community-Based Participatory Research to Address Health Disparities. • Heaney et al. (2007). The West End Revitalization Association's Community-Owned and -Managed Research Model: Development, Implementation, and Action	**HW #3 is due**
Learning Objectives: • Principals of community based participatory research (CBPR) • Application of CBPR to environmental epidemiology and environmental justice Program Competencies: 1,2,3 Course objectives addressed: 1,2,3,4,5,10,11,12			

Week #10 Section		***Hands-on practice: Infectious disease outbreak investigation***	
#21	Tuesday, Nov. 8th	**Social and behavioral epidemiology** Reading: Friis Chapter 9, p 159—175 • Video: http://theweightofthenation.hbo.com/watch/bonus-shorts/poverty-and-obesity-when-healthy-food-isnt-an-option (24 min)	
Learning Objectives: • Behavioral and social determinants of health • Stress and health • Social risk and protective factors, as applied to cardiovascular disease and obesity • Policy implications of the "social determinants of health" framework Program Competencies: 1,2,3 Course objectives addressed: 1,2,3,5,9,10,11			
#22	Thursday, Nov. 10th	**Epidemiology and Sustainability: application to UMD** Guest: UMD Sustainability Office representatives Reading: TBA	**Assign. #2 due**
Learning Objectives: • Apply epidemiologic principles to evaluate the impact of environmental sustainability initiatives on human behavior and health. Program Competencies: 1,2,3 Course objectives addressed: 1,12			
Week #11 Section		***Study designs to evaluation sustainability interventions***	
#23	Tuesday, Nov. 15th	**The role of epidemiology for healthy policy** Reading: Friis Chapter 7, p 121-133	
Learning Objectives: • Risk assessment • The application of epidemiology to policy • The relationship between policy and screening for disease Program Competencies: 1,2,3 Course objectives addressed: 1,2,11			
#24	Thursday, Nov. 17th	**Screening and health policy** Reading: Friis Chapter 7, page 130 • Kelto, 2015. Change to mammogram guidelines could lead to coverage shift. Explore website: http://screeningforbreastcancer.org/	
Learning Objectives: • Concepts of reliability and validity as they relate to disease screening (including sensitivity and specificity) • Policy implications of disease screening Program Competencies: 1,2,3 Course objectives addressed: 1,10,11			
Week #12 Section		***Study designs to evaluate sustainability interventions***	
#25	Tuesday, Nov. 22nd	**Test #3**	
	Thursday, Nov. 24th	Thanksgiving (no class)	
Week #13 Section		***No section this week***	
#26	Tuesday, Nov. 29th	Careers in Epidemiology (panel discussion)	

<table>
<tr><td colspan="4">Learning Objectives:
• Provide students with the opportunity to speak with epidemiologists working a variety of contexts to learn more about career opportunities in epidemiology
Program Competencies: 2,3 Course objectives addressed: 11</td></tr>
<tr><td>#27</td><td>Thursday, Dec. 1st</td><td>Life course epidemiology and application to policy
Reading:
• Kuh, D., Ben-Shlomo, Y., Lynch, J., Hallqvist, J., & Power, C. (2003). Life course epidemiology. Journal of Epidemiology and Community Health, 57(10), 778-783. doi: 10.1136/jech.57.10.778
• Shonkoff, J. P., et al. (2009). "Neuroscience, molecular biology, and the childhood roots of health disparities: building a new framework for health promotion and disease prevention." JAMA 301(21): 2252-2259.</td><td></td></tr>
<tr><td colspan="4">Learning Objectives:
• Definition of “life epidemiology”
• Life course models and empirical evidence
• Interventions guided by a life course perspective
Program Competencies: 1,2,3 Course objectives addressed: 1,2,8,11</td></tr>
<tr><td colspan="2">Week #14 Section</td><td>TBA</td><td></td></tr>
<tr><td>#28</td><td>Tuesday, Dec. 6th</td><td>Social networks and disease distribution
Guest: Jennifer Guida, UMD EPIB
Reading: TBA</td><td></td></tr>
<tr><td colspan="4">Learning Objectives:
• Understand what a social network is
• Describe how a social network can influence population-level patterns of health and disease
Program Competencies: 1,2,3 Course objectives addressed: 1,2,5,11</td></tr>
<tr><td>#29</td><td>Thursday, Dec. 8th</td><td>The future of epidemiology & Course summary
Reading:
• Galea, S. and B. G. Link (2013). "Six Paths for the Future of Social Epidemiology." American Journal of Epidemiology 178(6): 843-849.
• Khoury, M. J. (2015). "Planning for the Future of Epidemiology in the Era of Big Data and Precision Medicine." American Journal of Epidemiology 182(12): 977-979.</td><td></td></tr>
<tr><td colspan="2">Week #15 Section</td><td>Review for cumulative final exam</td><td></td></tr>
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