**PUBHLTH 224: Epidemiology in Public Health – Sections 01 and 02**

**Fall 2020**

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| **Contact Me**  https://static.thenounproject.com/png/551101-200.png | **Meet with Me**  https://static.thenounproject.com/png/947025-200.png | **Location and Time**  https://static.thenounproject.com/png/2511569-200.png | **Course Materials**  https://static.thenounproject.com/png/349329-200.png |
| Cassandra Spracklen, PhD  Pronouns: she, her, hers  [cspracklen@umass.edu](mailto:cspracklen@umass.edu) (Please allow 24 hours for response, not including weekends) | Please drop-in on Tuesdays or Thursdays 12:30pm-1:30pm Eastern Time, or email me for an appointment at a different time  Zoom meeting room:  <https://umass-amherst.zoom.us/j/5116872856> | This course will be taught remotely for Fall 2020  All lectures will be recorded and available for you to view asynchronously. | Oleckno WA. Essential Epidemiology. (1st edition). Long Grove, IL: Waveland Press, Inc., 2002.  Additional required materials will be posted on our Moodle page. |

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**General Course Description:**

Epidemiology, the study of the distribution and determinants of disease and health-related states in populations, is the foundational science of public health. To fully understand issues ranging from the etiology of cancer and heart disease to factors influencing public health policy, it is important for you to be familiar with basic concepts of epidemiology. This course is intended to introduce the science of epidemiology and to explore how epidemiologic methods are applied to solving public health problems. You will learn basic quantitative methods, study design concepts, and critical thinking skills relating to infections and chronic disease epidemiology.

**Prerequisites:**

Open to Sophomore, Junior, and Senior public health majors only.

**Course objectives:**

After completing this course, you will be able to:

* Quantify the occurrence of disease and compare the disease experiences of populations
* Identify the common study designs and tools used by epidemiologists to evaluate risk factors for disease
* Detail infectious disease outbreak investigation and control strategies
* Critically read papers from the epidemiology literature
* Discuss how epidemiologic research is applied to the development of public health recommendations

**Course Format:**

We are spread all over the globe in different time zones, work environments, and situations. Because of this, it isn’t feasible to hold regularly scheduled lectures in a remote setting. As such, our class meetings will be asynchronous and will involve a combination of pre-recorded lectures, readings, and practice exercises. Lectures will apply the concepts covered in the reading assignment for that day.

**COVID-19 Impact on This Course:** As a result of the ongoing COVID-19 pandemic, I will teach this course using remote learning. There is no requirement for you to attend any portion of this class synchronously. Here are the key things you need to know about how this course will run.

* We will use a Monday-Sunday weekly schedule. All materials for this course are posted on Moodle by week.
* I will communicate with you via email, course announcements sent through Moodle, and/or other aspects of the Moodle page (weekly videos).
* Each week, you will be required to view all lecture videos and take a weekly quiz. Some weeks will also have a required homework assignment (six total) or an exam (three total). There are also several optional assignments each week to give you an opportunity to practice what you have learned.
* I will hold student drop-in hours during a portion of our regularly scheduled class time. If you would like to talk to me but cannot attend during this time, please email me to set up a separate time.
* Finally, we may need to make adjustments as the pandemic develops throughout the semester. I will do my best to be flexible and accommodate unforeseen needs. Please reach out if you have any concerns or need different arrangements. This is a stressful and new situation for everyone!

**Course Requirements and Grading:**



**Exam #3 (20%)**

**Homework (20%)**

**Exam #2 (20%)**

**Weekly Quizzes (20%)**

**Exam #1 (20%)**

*Homework Assignments (20% of course grade):* There will be 6 homework assignments (20 points each) as listed in the course schedule. Each emphasizes important topics that have been presented in lecture and/or class readings. Some homework assignments may also require you to read a posted journal article and answer questions based on the article and related material being covered in lecture. You may discuss the assignments with one another, but you are expected to turn in your own work. Answer keys will be posted on the course website prior to the next exam. Homework assignments must be turned in by the end of the day (11:59pm) on the due date. Late homework will be accepted within 24 hours for half credit. Homework assignments must be typed and submitted through the course website. Emailed assignments will not be accepted except with prior permission from Dr. Spracklen. The lowest homework score will be dropped.

*Weekly Lecture Quizzes (20% of course grade):* 11 weekly quizzes (10 points each) will be administered through the course website each week. Each quiz will include 10 short questions about the information covered in the reading and lectures from the week. These quizzes have been designed to help make sure you continue to keep up with the course material, even if the course is being taught remotely. Quizzes must be completed by the end of the day (11:59pm) Sunday of each week. The lowest weekly quiz score will be dropped.

*Three Exams (60% of course grade; 20% each):* All exams (100 points each) will include material covered in class, assigned readings, weekly lecture quizzes, and homework. A basic scientific calculator is allowed on all exams. I will also provide a formula sheet. The first exam will cover all course materials from August 25 – September 22, 2020. The material covered on the second (October 1 - October 15) and third (October 27 – November 12) exam build upon material covered on the previous exams and add additional detail and content.

**Final Course Grade**: The relationship between numeric and letter grades is as follows:

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Letter Grade | Numeric Grade | | Letter Grade | Numeric Grade | Letter Grade | Numeric Grade | |
| A | 465-500 | B- | | 400-414 | D+ | 335-349 |
| A- | 450-464 | C+ | | 385-399 | D | 315-334 |
| B+ | 435-449 | C | | 365-384 | F | <315 |
| B | 415-434 | C- | | 350-364 |  |  |

**REQUIRED TEXTS AND TOOLS:**

**Textbook:**

Oleckno WA. *Essential Epidemiology*. (1st edition). Long Grove, IL: Waveland Press, Inc., 2002.

I have listed the textbook for this class as ‘required’ as I think you will greatly benefit from reading the material prior to watching/listening to the lecture material. While it is an older textbook, the concepts have not changed over the years. It can also be found for $10-20 if you look early. However, all of the concepts that you will be graded on will come from the material I post to the course website (e.g. readings, lecture slides, other course materials). As such, you should still be able to do well in this class if you do not purchase the textbook.

**Calculator:**

You will need a calculator that cannot transmit information to others. You may not use calculators on laptops, cell phones, PDAs, iPads, or other multi-functional electronic devices. A basic calculator with basic functions (+, -, x, ÷) will be sufficient. A calculator from the Texas Instruments TI-30X model group is adequate for this class and can be purchased at an office supply or campus bookstore for about $10-15. You should bring your calculator to all class periods, including lectures, discussions, and exams. You may not share calculators with other students during the exams.

**Lecture notes:**

Lecture notes will be posted to the course website prior to each class period. A course schedule appears at the end of this syllabus.

**Guided reading questions:**

To help facilitate comprehension of the assigned readings, I have created guided reading questions for each of the assigned readings. Completion of the guided reading questions is not required, and I will not be collecting or grading them. They are strictly intended for those who wish to use them. Guided reading questions will be available on the course website.

**Other instructional materials:**

All additional course materials will be posted to the course website or distributed in class as needed.

**Information to Support your Success in this Course:**

*Sick policy:* We are currently in the middle of a global pandemic. Despite our best efforts, it is possible that any of us may become sick at any point in the semester. If you become sick during the semester, email me as soon as you can and we will work together to come up with a plan for you to make up your coursework once you are feeling better. Everyone needs support and understanding in this unprecedented time, and we will remain flexible and adjust to the situation as we need to.

*Attendance:* I will not be keeping track of attendance during the semester while we are teaching remotely. However, it is important that you watch all recorded lectures as if you were attending class in person. In my experience, students who attentively watch the lectures and participate in the material receive higher scores on both homework assignments and exams. Downloading the notes from the course website will not be sufficient preparation for the exams.

*Website:*I will post all course materials on Moodle, and you will submit all assignments via Moodle. You need an account at OIT and must be officially enrolled in the course to access our course page. Because the website is an important class resource, make sure you have access to it early in the semester. If you have trouble accessing the course website, please let me know as soon as possible.

*Late Assignments:* Assignments submitted after 11:59pm on the due date will be considered late. I will accept late assignments received within 24 hours after the due date, but you will only receive half (50%) credit. Contact Dr. Spracklen in advance if you have an *exceptional circumstance* (such as a religious observance, illness, and/or other circumstances for which appropriate documentation is required) as to why you were unable to submit your homework on time.

*Extra Credit:* Your learning will be supported best by completing the readings and assignments described in this syllabus and on Moodle. I may provide opportunities for students to earn extra credit during the semester; if so, details will be posted on Moodle and discussed in class.

*Student Hours:*Even in a remote teaching semester, I will continue to hold student hours via Zoom every Tuesdays between 12:30-1:30pm. I am always happy to answer questions about material covered in the lectures, quizzes, or homework assignments. I am also happy to discuss other topics related epidemiology and public health, so feel free to stop by! Please email me if you would like to meet at a different time. Even if you don’t have specific questions, needs, or concerns, I would love to meet with you at least once during the semester. Graduate TAs and undergraduate course assistants will also be available for questions. Their student hours and Zoom meeting rooms are posted at the top of the Moodle page.

*Accommodation and Inclusive Learning Statement:*If you have a disability and require accommodations, please let me know as soon as possible. You will need to register with Disability Services (161 Whitmore Administration Building; phone (413) 545-0892). Information on services and materials for registering are also available on their website: [www.umass.edu/disability](http://www.umass.edu/disability) .

Your success in this class is important to me. We all learn differently and bring different strengths and needs to the class. If there are aspects of the course that prevent you from learning or make you feel excluded, please let me know as soon as possible. Together we’ll develop strategies to meet both your needs and the requirements of the course. There are also a range of resources on campus, including:

* Writing Center: [www.umass.edu/writingcenter](http://www.umass.edu/writingcenter)
* Learning Resource Center: [www.umass.edu/lrc](http://www.umass.edu/lrc)
* Center for Counseling and Psychological Health: [www.umass.edu/counseling](http://www.umass.edu/counseling)
* English as a Second Language Program: [www.umass.edu/esl](http://www.umass.edu/esl)

*Academic Honesty:* We want our learning environment to be honest and fair. UMass Amherst has an Academic Honesty Policy that includes cheating and plagiarism as forms of dishonesty, among others. You can read the full policy and find other helpful resources here: <https://www.umass.edu/honesty/resources> .

If you are unsure as to what actions specifically violate the academic honesty code, contact me immediately for clarification.

*Email communications*: I encourage you to reach out to your assigned TA for any questions that come up during the course. If they are unable to answer your question, they will forward it to me. However, you are welcome to email me if you would like to. I will respond to emails within 24 hours of receiving them from you. I will respond to emails sent between Friday 4pm-Sunday evening on Monday.

*Valuing, Recognizing, and Encouraging Diversity***:** Promoting and valuing diversity in the classroom enriches learning and broadens everyone’s perspectives. Inclusion and tolerance can lead to respect for others and their opinions and is critical to maximizing the learning that we expect in this course. Our own closely held ideas and personal comfort zones may be challenged. The results, however, create a sense of community and promote excellence in the learning environment. Diversity includes consideration of (1) the variety of life experiences others have had, and (2) factors related to “diversity of presence,” including age, economic circumstances, ethnic identification, disability, gender, geographic origin, race, religion, sexual orientation, social position. This class will follow principles of inclusion, respect, tolerance, and acceptance that support the values of diversity.

*Copyright Protection:* Many of the materials created for this course are the intellectual property of Dr Spracklen, the instructor. This includes, but is not limited to, the syllabus, lectures, homework assignments, and course notes. Except to the extent not protected by copyright law, any use, distribution or sale of such materials requires the permission of the instructor. Please be aware that it is a violation of university policy to reproduce, for distribution or sale, class lectures or class notes, unless the faculty member has explicitly waived copyright. This includes posting course materials, such as answer keys, to online forums and websites such as Course Hero.

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| **COURSE CALENDAR** |

*These dates are subject to change at the discretion of the instructor.*

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| **Week** | **Day** | **Date** | **Agenda/Topic** | **Reading(s)** | **Assignment(s)** |
| *Module 1: Epidemiologic Methods* | | | | | |
| **1** | Tuesday | 8/25 | Course Introduction | O: Chapter 1 & 2 |  |
|  | Thursday | 8/27 | Descriptive Studies | O: p. 38-41 |  |
|  | Sunday | 8/30 |  |  | WQ #1 Due |
| **2** | Tuesday | 9/1 | Quantitative Methods I: Measuring Disease | M: Aschengrau p.39-51 |  |
|  | Thursday | 9/3 | Case Study: Teen Pregnancy in MA |  | HW #1 Due |
|  | Sunday | 9/6 |  |  | WQ #2 Due |
| **3** | Tuesday | 9/8 | Introduction to Analytic Study Designs | O: Chapters 4 & 7 |  |
|  | Thursday | 9/10 | Quantitative Methods II: Comparing Populations | O: Chapter 6 |  |
|  | Sunday | 9/13 |  |  | WQ #3 Due |
| **4** | Tuesday | 9/15 | Problem Solving in Epi I |  |  |
|  | Thursday | 9/17 | Error and Bias | O: p. 137-147 | HW #2 Due |
|  | Sunday | 9/20 |  |  | WQ #4 Due |
| **5** | Tuesday | 9/22 | Confounding and Generalizability | O: p. 148-155 |  |
|  | Thursday | 9/24 | Catch-up and Exam Review |  |  |
|  | Sunday | 9/27 |  |  | WQ #5 Due |
| **6** | Mon-Wed | 9/28-9/30 | **Exam #1 (material through 9/22/20)** | | |
| *Module 2: Epidemiologic Study Designs* | | | | | |
|  | Thursday | 10/1 | Ecological and Cross-sectional Studies | O: Chapter 10 |  |
|  | Sunday | 10/4 |  |  | WQ #6 Due |
| **7** | Tuesday | 10/6 | Case-control Studies | O: Chapter 11 |  |
|  | Thursday | 10/8 | Cohort Studies | O: Chapter 12 | HW #3 Due |
|  | Sunday | 10/11 |  |  | WQ #7 Due |
| **8** | Tuesday | 10/13 | Case Study: Tanning and Melanoma | M: Lazovich 2010 |  |
|  | Thursday | 10/15 | Randomized Controlled Trials | O: Chapter 13 |  |
|  | Sunday | 10/18 |  |  | WQ #8 Due |
| **9** | Tuesday | 10/20 | Catch-up and Exam Review |  | HW #4 Due |
|  | Wed-Fri | 10/21-10/23 | **Exam #2 (material through 10/15/20)** | | |
| *Module 3: Topics in Epidemiology* | | | | | |
|  | Sunday | 10/25 |  |  | *No WQ #9* |
| **10** | Tuesday | 10/27 | Screening | O: Chapter 9 |  |
|  | Thursday | 10/29 | Infectious Disease Epidemiology | M: Webber 2016 |  |
|  | Sunday | 11/1 |  |  | WQ #10 Due |
| **11** | Tuesday | 11/3 | Outbreak Investigations | O: Chapter 14 |  |
|  | Thursday | 11/5 | Problem Solving in Epidemiology 2 |  | HW #5 Due |
|  | Sunday | 11/8 |  |  | WQ #11 Due |
| **12** | Tuesday | 11/10 | Genetic Epidemiology | M: Duggal 2019 |  |
|  | Thursday | 11/12 | Critiquing Epi Lit; Epi and Media | M: McGrath 2003 | HW #6 Due |
|  | Sunday | 11/15 |  |  | WQ #12 Due |
| **13** | Tuesday | 11/17 | Catch-up and Exam Review |  |  |
|  | Wed-Fri | 11/18-11/20 | **Exam #3 (Final Exam)** | | |

Abbreviations used: HW, homework; M, Moodle; O, Oleckno text book; WQ, weekly quiz; TBA, to be announced