

## **PubH 4040 Fundamentals of Epidemiology Spring Semester 2020**

### **Instructor**

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Office Hours: Tues/Thurs 1:30 – 2:30pm  
Please email or stop by to schedule a visit at another time

### **Required Textbook**

*Epidemiology for Public Health Practice*, 6<sup>th</sup> Edition. R.H. Friis, T.A. Sellers. 2021.

### **Course Material**

Syllabus, Lecture Notes, Assignments, and Grades will be located on USU Canvas.

### **Course Outcomes**

This course is designed to introduce students in public health and related health science fields to epidemiology, from terminology to study design and evaluation, and to the application of epidemiologic tools in public health.

### **The overall objectives of this class are as follows:**

- Discuss the foundations of epidemiology, including definitions, concepts, and applications of the field.
- Describe important historical developments in epidemiology.
- Understand practical disease concepts used in epidemiology.
- Apply common study design strategies and statistical measures used in epidemiologic research.
- Understand the basics of causal and statistical inference.
- Apply basic concepts and approaches used in the field of epidemiology.
- Describe basic concepts of infectious disease, chronic disease, work, and environmental epidemiology.
- Introduce aspects of molecular and genetic epidemiology.

### **Grading**

Your final grade for the course will be determined by combining the points you receive for each of seven major components. The final grade for the course will be determined as follows:

10% - Attendance (in classroom)  
15% - Canvas quizzes  
15% - Exam #1  
15% - Exam #2  
15% - Exam #3  
15% - Discussion paper  
15% - Cumulative final exam

Question material for quizzes, midterms and the final exam will come from the textbooks, course notes and lecture discussions.

Approximate grading scale:

A:	≥ 93%
A-:	≥ 90%
B+:	≥ 87%
B:	≥ 83%
B-:	≥ 80%
C+:	≥ 77%
C:	≥ 73%
C-:	≥ 70%
D+:	≥ 67%
D:	≥ 60%

Greater than 60% is required to pass

### **Attendance**

This course has typically been taught in a traditional in classroom setting. The design of the course is to promote interactive learning with the professor and fellow students through questions and small group problem solving. With covid-19, the course has transitioned

Spring 2021 to a hybrid format. Students are expected to physically attend class one day a week, while participating in the course via zoom the other day of the week. To promote physical presence, 10% of a student's grade will be attributed to physical attendance. A student needs to physically attend at least 1-time a week to earn full credit. You may miss one week during the semester to earn full credit. It is important to note that the assigned classroom is quite large (~180) seats. Physical distancing can still be maintained if you choose, which I strongly encourage, to attend class in person on both days of the week.

### Quizzes

Daily quizzes will possibly be administered anytime during the lecture or outside of lecture hours (outside quizzes will be announced in class) through CANVAS. Students will receive a verbal access code to complete these quizzes. Please bring a laptop, tablet, or smart phone to class to complete these quizzes. Quizzes will typically consist of 5 questions (1 point per question). A student will score a zero if they are absent or does not complete the quiz. Your lowest quiz score for the semester will be dropped in the total point tabulation of the quizzes. An average quiz score will be calculated to determine 15% of the student's final quiz grade.

### Exams

**Three exams** will be issued during the term. Each exam will consist of 15% of your final grade. Please pay close attention to the course outline when studying for the exams. These exams will be completed using the online Proctorio software with canvas. You will have multiple days to complete each exam. The exam questions will consist of true/false, multiple choice, and short answer questions.

The **final exam** is scheduled to be taken using the online Proctorio software with canvas. It will be available for students to take anytime between April 30<sup>th</sup> – May 3rd. You will have 120 minutes to complete the exam. The exam will consist of 15% of your final grade. The final exam format will be exactly like the previous exams. This final will be a comprehensive exam from chapters 1 – 13 and from the guest lectures.

### Epidemiology Discussion Paper

Students will be required to complete a 3-page discussion paper on a current public health/epidemiological topic. Students are asked to find a public health/epidemiology media article (newspaper, magazine, instagram/facebook/twitter post) that has caught their attention in the last couple of years. Students will need to successfully search back to the actual peer reviewed published finding. You are to describe the findings that the news media are reporting and then compare it to the actual published findings. From there, you then will need to describe the current epidemiology of the disease/health issue, most effective epidemiological methods of control and prevention, and to propose new methods of surveillance, prevention and control using logically sound methods that have been described in other published research findings.

- **This assignment is due by 04/02/2021.** You may turn it in early if you so desire.
- **Active Learning Library Exercise: This activity is scheduled for 02/18/21 and will be done via zoom. This exercise has been designed to help you learn how to search science literature. Come prepared with your media article ready to search. Attending this exercise will contribute 10% to your overall discussion paper grade.**
- **Science Writing Center Exercise: You are also required to make an appointment to have your preliminary draft reviewed in the Science Writing Center prior to submission. The SWC is located at ESLC 044B. You can schedule an appointment at <https://www.usu.edu/science/swc/index>. This paper review in the SWC will contribute 10% to your overall discussion paper grade.**
- I AM NOT LOOKING FOR A SUMMARY OF THE DISEASE OR HEALTH FINDING THAT YOU SELECTED.
- Use the information provided in the media report and the published peer reviewed article to begin your discussion paper. Then use additional outside research material to compare and contrast differences in your findings, history and future outlook of the health issue. Please remember to refer to epidemiological terms and the math that is associated with presenting these diseases. Using the outline provided in the textbook (page 14-15) and course notes (Chapter 1), please describe, explain, predict, and discuss prevention and control methods of the disease or behavior you have selected.
  - Items you may want to consider describing in your paper/presentation could include, what is the incidence and prevalence of the disease? What is the epidemiological and financial impact/burden of the disease at a regional, national, and international level? What techniques do epidemiologists use to address, control, or reduce the number of cases of this disease? What stigma or psychological issues might epidemiologists need to be aware of when collecting data and implementing control methods?
  - You need to seriously consider referring to refereed journal articles when presenting your findings. Websites are not considered refereed journal articles.
- **Discussion paper criteria:** This paper needs to be in your words and not plagiarized. The minimum requirements for this paper will be a 3-page minimum/4-page maximum, single space, 1-inch margins and no more than 12-point font. Take the time to fully describe the selected disease/behavior and its impact to public health. Please be thorough when describing the epidemiological principles.

### Course Evaluation

Please complete online course evaluations during the last 2 weeks of the course. I do read them and use them to improve the course.

### Course Fees

There are no course fees associated with this course.

**Accommodation for Disabilities**

Students with physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. All accommodations are coordinated through the Disability Resource Center (DRC) in Room 101 of the University Inn, 797-2444 voice, 797-0740 TTY, or toll free at 1-800-259-2966. Please contact the DRC as early in the semester as possible. Alternate format materials (Braille, large print or digital) are available with advance notice.

**2021 EPIDEMIOLOGY COURSE SCHEDULE**

<b>Day</b>	<b>Date</b>	<b>Lecture Topic</b>	<b>Readings in Epidemiology for Public Health Practice</b>
T	19-Jan	Course Intro. AND History and scope of epidemiology	Chap. 1: 1-47
TH	21-Jan	Practical applications of Epidemiology	Chap. 2: 49-89
T	26-Jan	Continue - Practical applications of Epidemiology	" "
TH	28-Jan	Measures of morbidity and mortality used in epidemiology	Chap. 3: 91-136
T	2-Feb	Crude rates, specific rates, adjusted rates	" "
TH	4-Feb	Descriptive epidemiology: person, place, time	Chap. 4: 137-198
T	9-Feb	Characteristics of place and time	" "
TH	11-Feb	Sources of data for use in epidemiology	Chap. 5: 199-237
T	16-Feb	Continue - Sources of data in Epid AND exam review	" "
<b>W/TH</b>	<b>02/17-02/18</b>	<b>EXAM I (CHAPTERS 1-5) WED-THUR Proctorio</b>	
<b>TH</b>	<b>18-Feb</b>	<b>Guest Presentation - Anne Hedrich. USU library Zoom and source search activity (paper preparation)</b>	Guest Notes
T	23-Feb	Study Designs: Ecologic, cross-sectional studies, case-control studies	Chap. 6: 239-280
TH	25-Feb	Ecologic, cross-sectional studies, case-control studies continued	" "
T	2-Mar	Study Designs: Cohort studies	Chap. 7: 281-321
TH	4-Mar	Experimental study designs	Chap. 8: 323-359
T	9-Mar	Community trials	" "
TH	11-Mar	Continue - Community Trials	" "
T	16-Mar	Study Designs Activity and exam review	
<b>W/TH</b>	<b>03/17-03/18</b>	<b>EXAM II (CHAPTER 6 - 8) - FRI-MON Proctorio</b>	
TH	18-Mar	Measures of effect	Chap. 9: 361-383
T	23-Mar	Data interpretation issues	Chap. 10: 385-405
TH	25-Mar	Continue - Data interpretation issues	" "
T	30-Mar	Screening for disease in the community	Chap. 11: 407-430
TH	1-Apr	Continue - screening for diseases in the community	" "
<b>F</b>	<b>2-Apr</b>	<b>Epidemiology Discussion Paper Due By End of Day</b>	
<b>T</b>	<b>6-Apr</b>	<b>Bear River Health Department Presentation and Panel Discussion (All students present in classroom)</b>	Guest Notes
<b>TH</b>	<b>8-Apr</b>	<b>NO CLASS - FRIDAY SCHEDULE</b>	
T	13-Apr	Infectious disease epidemiology (Finish watching recorded lecture)	Chap. 12: 433-475
TH	15-Apr	Infectious disease epidemiology AND exam review	" "
<b>F-M</b>	<b>04/16-4/19</b>	<b>EXAM III (Chapters 9 - 12) - FRI-MON Proctorio</b>	
<b>T</b>	<b>20-Apr</b>	<b>Guest Presentation - Dr. Michael Visick. Applied Epidemiology (All students present in classroom)</b>	Guest Notes
TH	22-Apr	Epidemiologic aspects of chronic, work and the environment	Chap. 13: 477-517
T	27-Apr	Continue - work and environmental epidemiology	" "
<b>F-M</b>	<b>04/30-05/03</b>	<b>Comprehensive Final Exam: Friday - Monday (Proctorio) (120 mins)</b>	