

PubH 4040 Fundamentals of Epidemiology Spring Semester 2020

Instructor

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VSU 114

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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, 5th Edition. R.H. Friis, T.A. Sellers. 2014.

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 five major components. The final grade for the course will be determined as follows:

20% - Exam #1

20% - Exam #2

20% - Exam #3

10% - Discussion paper

10% - Quizzes

20% - 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: $\geq 93\%$

A-: $\geq 90\%$

B+: $\geq 87\%$

B: $\geq 83\%$

B-: $\geq 80\%$

C+: $\geq 77\%$

C: $\geq 73\%$

C-: $\geq 70\%$

D+: $\geq 67\%$

D: $\geq 60\%$

Greater than 60% is required to pass

Quizzes

Daily quizzes will possibly be administered anytime during the lecture using an iClicker and/or through CANVAS (outside of lecture hours). Please register your iClicker ASAP. If a quiz will be administered through CANVAS, I will announce it in class and will provide instructions as to when it will need to be completed. Quizzes will 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 10% of the student's final quiz grade.

Exams

Three exams will be issued during the term. Each exam will consist of 20% of your final grade. Please pay close attention to the course outline when studying for the exams. These exams will be completed in the USU Testing Center. You will have 2 days to complete this exam. Please schedule your appointments now. Students will have 60 minutes to complete the online portion of the exam and as much time as you need for the short answer. The exam questions will consist of true/false, multiple choice, and short answer questions.

The **final exam** is scheduled to be taken in the USU Testing Center. It will be available for students to take anytime between April 25th – April 29th. Please schedule your take now to take the exam. You will have 80 minutes to complete online portion of the exam and as much time as you need for the short answer. The exam will consist of 20% 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 year. 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 03/27/2020.** You may turn it in early if you so desire.
- **Active Learning Library Exercise: This activity is scheduled for 02/06/20 or 02/11/20 (half of the class will be assigned to each date) in LIB122. 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.

2020 EPIDEMIOLOGY COURSE SCHEDULE

| Day | Date | Lecture Topic | Readings in Epidemiology for Public Health Practice |
|-------------|-------------------|---|--|
| T | 7-Jan | Course Intro. AND History and scope of epidemiology | Chap. 1: 1-54 |
| TH | 9-Jan | Practical applications of Epidemiology | Chap. 2: 55 - 106 |
| T | 14-Jan | Continue - Practical applications of Epidemiology | " " |
| TH | 16-Jan | Measures of morbidity and mortality used in epidemiology | Chap. 3: 107- 156 |
| T | 21-Jan | Crude rates, specific rates, adjusted rates | " " |
| TH | 23-Jan | Descriptive epidemiology: person, place, time | Chap. 4: 157 - 234 |
| T | 28-Jan | Characteristics of place and time | " " |
| TH | 30-Jan | Sources of data for use in epidemiology | Chap. 5: 235 - 278 |
| T | 4-Feb | Continue - Sources of data in Epid AND exam review | Chap. 5: 235 - 278 |
| W/TH | 5-Feb | EXAM I (CHAPTERS 1-5) Testing Center (Wed or Thurs) | |
| TH | 6-Feb | Finding epidemiology data (for discussion paper) - Anne Hedrich. LIBRARY ROOM 122 | Half of Class |
| T | 11-Feb | Finding epidemiology data (for discussion paper) - Anne Hedrich. LIBRARY ROOM 122 | Half of Class |
| T | 11-Feb | Study Designs: Ecologic, cross-sectional studies, case-control studies (Scott gone - recorded lecture) | Chap. 6: 279 - 322 |
| TH | 13-Feb | Dr. Ed Redd - Reviewing historical epidemiology data and vaccine concerns | Presenter's Notes |
| T | 18-Feb | Study Designs: Cohort studies | Chap. 7: 323 - 366 |
| TH | 20-Feb | Experimental study designs | Chap. 8: 367 - 408 |
| T | 25-Feb | Community trials | Chap. 8: 367 - 408 |
| TH | 27-Feb | Continue - Community Trials | Chap. 8: 367 - 408 |
| T | 3-Mar | Spring Break - No Classes | |
| TH | 5-Mar | Spring Break - No Classes | |
| T | 10-Mar | Study Designs Activity and exam review | |
| W/TH | 11-Mar | EXAM II (CHAPTER 6 - 8) - Testing Center (Wed or Thurs) | |
| TH | 12-Mar | Measures of effect | Chap. 9: 409 - 434 |
| T | 17-Mar | Measures of Effect AND Data interpretation issues | Chap. 9 & 10: 409 - 460 |
| TH | 19-Mar | Continue - Data interpretation issues | Chap. 10: 435 - 460 |
| T | 24-Mar | Screening for disease in the community | Chap. 11: 461 - 490 |
| TH | 26-Mar | Continue - screening for diseases in the community | Chap. 11: 461 - 490 |
| F | 27-Mar | Epidemiology Discussion Paper Due By End of Day | |
| T | 31-Mar | Applied epidemiological approaches - Dr. Michael Visick | Presenter's Notes |
| TH | 2-Apr | Infectious disease epidemiology | Chap. 12: 491 - 546 |
| T | 7-Apr | Infectious disease epidemiology | Chap. 12: 491 - 546 |
| TH | 9-Apr | Infectious disease epidemiology AND exam review | Chap. 12: 491 - 546 |
| M/T | 13-Apr | EXAM III (Chapters 9 - 12) - Testing Center | |
| T | 14-Apr | Public Health Approaches at the Local, State, and National Levels - Nathaniel Lewis EIS Officer | Presenter's Notes |
| TH | 16-Apr | Epidemiologic aspects of chronic, work and the environment | Chap. 13: 547 - 598 |
| T | 21-Apr | Continue - work and environmental epidemiology | Chap. 13: 547 - 598 |
| TH | 4/23/04/27 | Comprehensive Final Exam : Thursday, Friday or Monday at Testing Center (110 mins) | |