

## CHS 473 Epidemiology Wintermester 2019

### Number of Credits

3

### Instructor

Dr. Julie Smith-Gagen



The instructor, Dr. Julie Smith-Gagen, standing next to the Broad Street pump in London. The pump delivered contaminated water that caused the deadly cholera outbreak in 1854 and demonstrates a public health action taken in light of epidemiological evidence.

### Catalog Description

Principles used in measuring health outcomes with a focus on measures of frequency, associations, and epidemiological study designs. (Formerly HE/PUBH 473/673; implementation Fall 2009)

Prerequisite(s): CHS 101; CHS 102; CHS 200; CHS 280; junior or senior standing.

### Required Textbooks/Materials

The following texts are required material in this course:

Leon Gordis, *Epidemiology*, 5th ed. Philadelphia, PA: Elsevier/Saunders, 2014.

Click here for the [full-text online version via ClinicalKey \(UNR users only\)](#)

## Student Learning Outcomes

Upon completion of this course, students will be able to

- describe the historical roots of epidemiologic thinking and their contribution to the evolution of the scientific method, diagnosis and treatment tools;
- use basic epidemiologic measures for describing morbidity and mortality to express numerically the amount and distribution of health- and non-health-related outcomes;
- use the distribution of a health-related outcome to generate hypotheses that might provide an explanation;
- explain basic statistical and epidemiologic concepts of estimation, inference, and adjustment to establish association;
- explain how to use evidence of an association to make a judgment about whether an association is causal;
- describe the basic epidemiologic study designs that are used to test hypotheses, identify associations, and establish causation; and
- critically examine and evaluate the strength and limitations of a public health topic (scientific literature, mass media, intervention, or policy) and demonstrate quantitative regard for various sources of error.

## First Week of Materials/Assignments

The following schedule is subject to change:

- January 2:* Scientific Method, Hypothesis Generation, and Societal Perspectives on Causality through Time  
Black Death  
Due: In-class worksheets
- January 3:* Infectious Disease Transmission and Spanish Flu  
Read: Gordis, chapters 2 and 6  
Due: In-class worksheets
- January 4:* Ghost Map and Epidemiological Measures  
Read: Gordis, chapter 3 and 4  
Due: In-class worksheets

## Course Details

By studying epidemiology, you will become a more effective consumer of health information in the media—by utilizing *evidence-based thinking*.

Epidemiology is the basic science of public health. It answers questions such as, “Who gets disease and why?” This course covers the fundamental principles of epidemiology through examples and stories. We will begin with an investigation into the Black Death in the fourteenth century, when science knowledge and modes of communication were very limited and societal reactions were extreme. We will then examine the societal conditions that lead to

cholera outbreaks in the nineteenth century, and how John Snow overcame societal and political challenges to his water-borne theory of transmission to develop epidemiological methods in the absence of scientific evidence, and address and solve the problem. Lastly, we will examine AIDS in the twentieth century, and SARS and the West African Ebola epidemic in the twenty-first century, and society's reaction despite increasing knowledge regarding the diagnosis, treatment, and prevention of human diseases.

## Grade Breakdown

The point distribution for the course is:

<b>Assignment</b>	<b>Points</b>
Participation	150
Assignments	300
Final Exam	300
Medical Myth	250
<i>Total</i>	<i>1000</i>

The percentage distribution for the course is:

<b>Letter</b>	<b>Percentage</b>
A	94–100
A-	90–93
B+	87–89
B	84–86
B-	80–83
C+	77–79
C	74–76
C-	70–73
D+	67–69
D	64–66
D-	60–63
F	below 60