

College of Public Health & Health Professions
Course Syllabus

Public Health Concepts in Infectious Diseases
PHC 6517, section 1816

M 10:40-11:30am
HPNP room G-109

W 9:35-11:30am
HPNP room G-109

Fall 2016

Instructor Information

Robert L. Cook, MD, MPH
2004 Mowry Road, CTRB Bldg. Room # 4232
Office phone: (352) 273-5869
Contact email: cookrl@ufl.edu
Office hours: By appointment (before/after class usually good if discussed in advance).
Assistant: Michele Rollen-Hanson, (352) 294-5672; rollen@ufl.edu

Course Overview or Purpose

This course is intended to ensure that students: a) understand the various epidemiological research methods used to obtain evidence regarding infectious disease transmission and health outcomes; b) can interpret the existing evidence needed to make public health or policy recommendations; and c) are able to propose research strategies to obtain evidence needed to improve public health outcomes related to infectious diseases. Topic areas will include key infectious disease conditions that are relevant in the early 21st century, with additional focus on specific infections that are problematic during the year the course is offered (for example, 2016 will emphasize Zika virus). These include malaria, HIV infection, vector-borne infections, influenza, sexually transmitted diseases, emerging infectious diseases, health-care associated infections, and other conditions chosen by the students. Students will use the knowledge and skills gained in the course to design an original research study that addresses an important question related to infectious diseases.

Course Objectives and/or Goals

- 1) Identify and describe current public health issues related to the most important infectious diseases challenging our world today.
 - a. Use a range of resources to obtain information regarding basic epidemiology of infectious diseases.
 - b. State relevant facts related to several of the most pressing infectious disease topics today.

- c. Interpret data from tables, graphs, and research papers that describe infectious disease epidemiology.
 - d. Describe factors that influence variation in health outcomes of specific infectious diseases across diverse populations.
- 2) Describe strategies to reduce the transmission of infectious diseases.
- a. Identify specific factors that are associated with transmission of infectious diseases transmission, including characteristics of the pathogen, the human host, other animals and vectors, and the environment.
 - b. State the reproductive rate equation in infectious disease epidemiology, and for a specific infection, describe how each aspect of the equation can be influenced by public health intervention strategies.
 - c. Explain specific prevention strategies to prevent infectious disease transmission, including vaccines, and identify facilitators and barriers to these strategies.
- 3) Interpret strengths and weaknesses of specific epidemiologic research studies as they apply to infectious disease epidemiology.
- a. Discuss the strengths and limitations of specific research study designs used to obtain evidence in infectious disease epidemiology.
 - b. Describe strengths and limitations in our ability to measure the impact of infectious diseases in human populations, including measurement of infection (e.g. diagnosis) and health outcomes and behaviors.
 - c. Explain how various research tools, such as genetic sequencing of pathogens, and mathematical models, can be used to inform knowledge about infectious disease transmission and prevention.
- 4) Design and critique research studies to answer a research question related to infectious disease epidemiology.
- a. Construct research questions that include predictors, outcomes, and an identified population from existing literature, your own research study, and scenarios of various public health situations.
 - b. Design an original research study and present it in both a written document and oral presentation.

Course Materials

Textbook (Recommended): Infectious Disease Epidemiology Theory and Practice, 3rd edition (2014). By Kenrad E. Nelson and Carolyn F. Masters Williams.

1-3 journal articles each week. These will be available online on the course CANVAS e-learning system, which can be accessed at URL: lss.at.ufl.edu and requires your Gatorlink ID.

Information available via the internet, especially from agencies such as CDC and WHO.

Course Requirements/Evaluation/Grading

Time commitment. Each week, there is a 1-hour class on Monday and a 2-hour class on Wednesday. In general, approximately 1/3 of class time will be devoted to review of a specific infectious disease concept or condition, 1/3 will be a group discussion of research articles or existing data, and 1/3 will include a range of presentations from guest lecturers who will discuss their research activity for specific infectious disease topics. For this 3-credit graduate course,

students are expected to spend approximately 6-9 hours each week outside of class reviewing core information about the infectious disease topic of the week, doing homework assignments, and working towards their final class project.

The class schedule of topics and guest lectures is available is included as a separate document that will be updated periodically during the semester. The most recent version will be posted on the Canvas web site.

Homework. 15% of grade. There will be a homework assignment each week, assigned one week prior to the due date. Homework will usually involve a search for information needed to answer specific questions related to infectious disease epidemiology, or to read and comment on specific research journal articles that are assigned during the semester. In this course, specific homework assignments are often assigned approximately one week before the due date to allow flexibility regarding the specific topics and journal articles we choose. The responses to all questions should never be more than one page in length, and should be submitted in Canvas prior to class. I will drop your lowest homework grade. Late homeworks may be accepted, with at least 1 point deduction per day (of 10), if arrangements are discussed prior to class (e.g. in case of illness).

Article review: 10% of grade. Each student will present two journal articles during the semester and participate in class discussions. For article review, students will chose an infection at the beginning of the semester and after the first exam. At least two weeks prior to the presentation date, the student will do a literature search for articles related to the topic and choose 1-3 articles they would like to discuss. The articles should be research articles that present original research data (not be a review paper). Students must submit their article selections to Dr. Cook for approval at least 10 days prior to their scheduled presentation, so that the assigned article can be posted to the class 7 days prior to the day of discussion. On the day of each paper discussion, the student will lead a 15-20 minute class discussion that will include:

1. What is the specific research question, and why is it significant?
2. What was known and unknown before the study started?
3. What is the study design, and why was that study design used?
4. Who was the population and how was a sample of the population identified?
5. What was the major outcome and how was it measured?

Group assignments: 10%. At least 2 times during the semester, students will select a question related to a current infectious disease topic such as Zika or Ebola virus. Students will prepare an answer to the question for a 5-minute presentation in which they attempt to find specific evidence to support an answer to the question:

1. Identify at least 1 source of original data or declare that there are no data
2. Create a 1-page (max) handout to bring for class that outlines the answer to the question, presents some data (if available), and explain a rationale for their response.
3. List at least 2 references used to address the question.

Class participation: 5%. The class has a lot of discussion, and students are expected to participate by being present in class and by speaking and discussing the topics of the day. When guest lecturers attend, students are strongly encouraged to participate in the discussions. Grades for class participation are generally provides as excellent (95), good (90), or could have been better (85). Missing more than 2 classes for any reason will result in 5 points off the participation grade, unless specifically negotiated with the instructor. I will provide feedback on participation rates at the time of Exam 1.

Final research paper and presentation (15% each). Each student will identify an infectious disease research topic of their own choosing, and prepare a 20-minute oral presentation and a 10-15 page (double spaced) paper outlining the rationale and the study design for a research study, that the student designs, that is designed to answer a specific research question. The paper will have several deadlines for completion of benchmarks during the semester, and peer review of other students' papers. Accomplishing these benchmarks will be part of the grade.

The paper will be graded and returned to the student at least one week before the oral presentation, to allow students time to incorporate feedback into the presentation. Students will identify up to 3 specific learning objectives for the oral presentations.

Examinations (15% each exam). There will two examinations during the class that will include a combination of question types (e.g. multiple choice, matching, open-ended, interpretation of information). The first exam will cover material from the first half of the semester, and the second exam will cover information from the second half, including content from the student presentations.

Book club participation (bonus points on exam) We will have a book discussion late in the semester. Participating in the book discussion is optional, but it will provide 3 bonus points to one of the exams.

Grades:

- Homework 15%
- Article presentations 10%
- Assignments 10%
- Class participation 5 %
- Written Paper 15%
- Oral Presentation 15%
- Exam 1 15%
- Exam 2 15%

The grading scale for this course consists of the standard scale, including minus grades, below. The conversion factors for grade point values that are assigned to each grade are also included (in parentheses):

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|------------|-------------|
| 93% - 100% | = A (4.00) |
| 90% - 92% | = A- (3.67) |
| 87% - 89% | = B+ (3.33) |
| 83% - 86% | = B (3.00) |
| 80% - 82% | = B- (2.67) |
| 77% - 79% | = C+ (2.33) |
| 73% - 76% | = C (2.00) |
| 70% - 72% | = C- (1.67) |
| 67% - 69% | = D+ (1.33) |
| 63% - 66% | = D (1.00) |
| 60% - 62% | = D- (0.67) |
| Below 60% | = E (0.00) |

Statement of University’s Honesty Policy (cheating and use of copyrighted materials)

Academic Integrity – Students are expected to act in accordance with the University of Florida policy on academic integrity (see Graduate Student Handbook for details). Cheating or plagiarism in any form is unacceptable and inexcusable behavior. This will be discussed during the first day of class.

*We, the members of the University of Florida community,
pledge to hold ourselves and our peers to the
highest standards of honesty and integrity.*

Policy Related to Class Attendance:

5% of grade is related to class participation. 1-2 excused absences are allowed; additional absences will count against this grade.

Policy Related to Make-up Exams or Other Work

Example:

Attendance and Make-up Work –Personal issues with respect to class attendance or fulfillment of course requirements will be handled on an individual basis.

Statement Related to Accommodations for Students with Disabilities

Students with Disabilities - Students requesting classroom accommodation must first register with the Dean of Students Office, which will provide documentation to the student. The student should then provide this documentation to me.

Phone Numbers and Contact Sites for University Counseling Services and Mental Health Services

University Counseling Services
<http://www.counsel.ufl.edu/services.asp>
P301 Peabody Hall – 392-1575

Student Mental Health Services in the Student Health Care Center
<http://www.health.ufl.edu/shcc>
Room 245, Infirmary Bldg.- 392-1171

Final Note

Course syllabi will be posted on a student accessible website that will be submitted to the departmental office to document compliance with this policy.