Semester: Fall 2017
Course Number: 10:832:335
Course Title: Epidemiology
Course Day and Time: Wednesday 12:35 to 3:35 PM
Location: Cook/Douglass Campus, Thompson Hall, Room 206

Course Instructor: Michelle T. B. Manderski, MPH
Contact Information: michelle.manderski@rutgers.edu
Office Hours and Location: TBD
School of Public Health, Busch Campus, Room 312
683 Hoes Lane West, Piscataway NJ 08854

Recommended Text: Lilienfeld’s Foundations of Epidemiology, 4th Ed.

Additional Materials: Sakai – Class lectures, readings, homework assignments, quizzes, syllabus updates, and resources will be posted and updated regularly. It is critical that you check the Sakai site regularly to ensure that you don’t miss important updates or supplementary class material.

Remind101 – Visit https://www.remind.com/join/epifa17 or text @epifa17 to the number 81010 to sign up for class alerts on your mobile device (to be used for emergencies only, e.g. class cancellations)

Course Description
Study of the principles and methods of epidemiology; the study of the distribution (patterns of occurrence) and determinants (causes) of disease and injury in human populations.

Public Health Learning Goals
Students Will:
1. Think critically in public health
2. Effectively communicate public health information
3. Develop, apply, and analyze concepts from research methods and basic statistics
4. Utilize information literacy skills in public health
5. Understand the role and importance of professional development
6. Understand and apply professional ethics

Core Competencies Addressed
- 2.d. Data Usage
- 2.e. Data analysis
- 2.f. Evidence-based approaches
- 3.a. Population health concepts
- 3.b. Introduction to processes and approaches to identity needs and concerns of populations
- 3.c. Introduction to approaches and interventions to address needs and concerns of populations
- 4.a. Science of human health and disease
Course Overview
This course covers the principles and methods of epidemiology, the study of the distribution and determinants ('plausible causes') of disease and injury in human populations. The course will introduce the basic principles and methods of epidemiology, with an emphasis on critical thinking, analytic skills, epidemiologic terminology and application to public health practice and research. We will cover topics as outcome measures, methods of measurement, surveillance, quantitative study designs, and sources of data. We will also cover history of the field of epidemiology and its transition. This course will nurture an appreciation for the application of epidemiology to subfields (e.g., infectious/chronic diseases, mental health issues, social determinants, etc.), as well as foster the understanding and application of epidemiologic methods to current public health issues.

Learning Goals
By the end of this course, students will be able to:
1. Describe the historical roots of epidemiologic thinking and their contribution to the evolution of the scientific method.
2. Explain how ethical principles affect epidemiologic research.
3. Use rates and proportions to express numerically the amount and distribution of health- and non-health-related outcomes.
4. Use the distribution of a health-related outcome in groups to generate hypotheses that might provide a causal explanation.
5. Explain basic statistical and epidemiologic concepts of estimation, inference, and adjustment to establish association.
6. Explain how to use evidence of an association to make a judgment about whether an association is causal using the principles of contributory cause.
7. Describe the basic epidemiologic study designs that are used to test hypotheses, identify associations, and establish causation.
8. Describe the concepts of measurement of test performance and be able to apply the concepts of testing and screening in different settings.
9. Apply the concepts of benefits, harms, and cost to a public health decision.
10. Describe the broad applicability of epidemiologic methods to clinical and basic science as well as public policy.

Academic Integrity
Academic Integrity is vital to the mission of Rutgers, to education at Rutgers and membership in the Rutgers community. It is a core value that supports trust among students, and between students and teachers. It is also a shared value; administration, faculty and students each play a vital part in promoting, securing and nurturing it. See the Rutgers Academic Code and Academic Oath at: http://academicintegrity.rutgers.edu/
Course Assessment
The following will assess learning goals:

- **Participation** is required. Students will be expected to attend class and engage in classroom discussions. **In-class activities** will take place after lecture during some class periods and will be graded based on completion and effort as part of the Participation grade.

- **Homework Assignments** will be posted and completed/submitted on Sakai. Web homework assignments have no time limit and can be submitted twice, and the highest score will be recorded. All assignments must be completed and submitted by the specified due date and time. Late submissions will result in the following deductions:
  - 25% automatic deduction if submitted within 24 hours following the due date/time
  - 50% automatic deduction if submitted within 48 hours following the due date/time
  - Homework will not be accepted after 48 hours following the due date/time

- **A group project** will be assigned in the second half of the semester. Details about this will be forthcoming.

- **2 quizzes** will assess understanding of research methods, calculations, and interpretations

- **Midterm and final exams** will be completed in class and require only a pen or pencil and a simple calculator. Cell phones, smart phones, tablets, laptops, and other electronic devices will NOT be permitted. The final exam is cumulative, with emphasis on post-midterm materials.

Course Grading
A=90-100; B+=85-89.99; B=80-84.99; C+=75-79.99; C=70-74.99; D=60-69.99; F= < 60

- 10%..................Class participation (attendance, lecture, discussion, class activities)
- 20%..................Web homework assignments
- 15%..................Group Project
- 15%..................Quizzes
- 20%..................Midterm Exam
- 20%..................Final Exam

Classroom Expectations
Rutgers University encourages the free exchange of ideas in a safe, supportive, and productive classroom environment. To facilitate such an environment, students and faculty must act with mutual respect and common courtesy. Thus, behavior that distracts students and faculty is not acceptable. Such behavior includes cell phone use, surfing the internet, checking email, text messaging, listening to music, reading newspapers, leaving and returning, leaving early without permission, discourteous remarks, and other behaviors specified by individual instructors. Courteous and lawful expression of disagreement with the ideas of the instructor or fellow students is, of course, permitted.

With this in mind, the following class rules will be strictly enforced:

1. **NO PHONES IN THE CLASSROOM:** Cell phones must be silenced and put away. If your phone rings or you are found texting during class, you will be asked to leave.

2. **COMPUTER USE IS FOR NOTE-TAKING ONLY:** If you prefer to keep electronic notes, you may use your computer to do so. However, any students found to be using their computer for non-class purposes will be asked to leave.
Attendance and Cancellation of Classes
In accordance with Rutgers University regulations, attendance is expected at all regularly scheduled meetings of a course and individual courses may set policies for maximum absences. Please refer to the link below for more specific information:
http://sasundergrad.rutgers.edu/academics/courses/registration-and-course-policies/attendance-and-cancellation-of-class

If you expect to miss one or two classes, please use the University absence reporting website https://sims.rutgers.edu/ssra/ to indicate the date and reason for your absence. All examination scheduling conflicts must be discussed at least 1 week prior to the scheduled date of the exam. In the event of an emergency or illness on the day of an exam, you must notify me BEFORE the exam. Students must provide verification of the absence in order to schedule a make-up exam. Students who do not make alternate arrangements prior to the exam will be given a grade of “0” for that exam – NO EXCEPTIONS.

Tips for a Successful Semester
1. If you are having problems, seek help early. If you make an appointment with me, please keep it or notify me as soon as possible of a conflict. Come to our appointment prepared, having gone over the lectures, text, and assignments.
2. If you must miss a lecture, be sure to get notes from a classmate. Please do not ask me to give you notes from lectures you missed.
3. Check your Rutgers email and Sakai website regularly to check for class announcements and updates to course resources, assignments, and gradebook.
4. I am reachable by email during business hours and usually respond within the day. If you have an urgent matter that cannot wait until the next school day, email me with the word “URGENT” in the subject line (it will be forwarded to my personal email). Please note that if this privilege is abused, it will be revoked.
Preliminary Class Outline by Week

The following is a preliminary schedule of lecture topics. Corresponding readings and homework assignments will be assigned throughout the semester. See Sakai for updates.

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>9/6/17</td>
<td>Course Overview; History and Scope of Epidemiology</td>
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<td>9/16/17</td>
<td>Practical Concepts; Epidemiology Data</td>
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<td>9/20/17</td>
<td>Outcome Measures; Standardization Methods</td>
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<td>9/27/17</td>
<td>Health Indicators; Epidemiology according to Person, Place, and Time</td>
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<td>10/4/17</td>
<td>Causal Inference; Quiz 1</td>
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<td>10/11/17</td>
<td>Descriptive Studies; Midterm Review</td>
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<td>10/18/17</td>
<td><strong>Midterm Exam (Weeks 1-6)</strong></td>
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<td>10/25/17</td>
<td>Observational Studies: Study designs, effect estimates, and sources of bias</td>
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<td>11/1/17</td>
<td>Intervention Studies; Screening Studies</td>
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<td>11/8/17</td>
<td>Confounding, and Effect Modification; Hypothesis Testing</td>
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<td>11/15/17</td>
<td>Quiz 2</td>
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<td>11/22/17</td>
<td>THANKSGIVING RECESS – NO CLASS</td>
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<tr>
<td>11/29/17</td>
<td>Infectious Disease Surveillance; Field Investigation</td>
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<td>12/6/17</td>
<td>Chronic Disease Epidemiology; Social Epidemiology</td>
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<tr>
<td>12/13/17</td>
<td>Group Presentations</td>
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<td>TBA</td>
<td><strong>Final Exam (Cumulative)</strong></td>
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