## Course Organization

Class is scheduled for 4:30-5:20 PM on Mondays and Wednesdays. Typically, there will be a lecture on an epidemiologic method or quantitative method, or a review session combined with a lecture.

The topics of each lecture and review session, along with reading and homework assignments are listed in section 7 of the syllabus. The lectures will be held in Classroom 4 at the School of Public Health on East Campus. The syllabus and other class forms, the lecture notes, homework and reading assignments will be also available for downloading from the course website on the Blackboard Learning System (BLS).

## Course Goals and Objectives (including MPH Competencies)

The purpose of this course is to equip public health students with the concepts and principles of epidemiology, the basic scientific discipline of public health. As defined in *A Dictionary of Epidemiology*, epidemiology is the "study of the distribution and determinants of health-related states or events in specific populations, and the application of this study to the control of health problems."

In this course, you will review the basic logic of epidemiologic studies, consider some of the basic mathematical background needed in epidemiology, find out about the ongoing collection of epidemiologic data, and consider the criteria of causality. We will study the various epidemiologic study designs from a theoretical and practical point of view. We will point out the strengths, limitations, and applications of these study designs. Also, we will address the sources of error, particularly the biases, that may invalidate epidemiologic studies.
Objectives and Competencies

Competencies have recently been developed by the Association of Schools of Public Health for each of the core areas in public health. They are defined as a “Core Set of Applied Knowledge, Skills, and other Attributes … for the Broad Practice of Public Health”. By mastering the competencies, you will have the expertise needed to succeed in the workplace as a public health professional. In epidemiology, the core competencies are:

- Explain Importance of Epidemiology for Informing Discussion of Health Issues
- Describe Public Health Problem in Terms of Person, Place, and Time
- Apply Basic Terminology and Definitions of Epidemiology
- Identify Key Sources of Data
- Calculate Basic Epidemiology Measures
- Evaluate Strengths and Limitations of Epidemiologic Reports
- Draw Appropriate Inferences from Epidemiologic Data
- Communicate Epidemiologic Information to Lay and Professional Audiences
- Comprehend Basic Ethical and Legal Issues Pertaining to Epidemiologic Data
- Identify Principals and Limitations of Public Health Screening Programs

This course is designed to address these competencies through a set of learning objectives. Specifically, by the end of this course you will:

- be able to discuss and explain the definition, history, and importance of epidemiology for informing public health decisions;
- be able to define and manipulate the basic statistical concepts of rates, ratios, odds, and proportions, and be able to do simple standardization;
- be able to define, and manipulate mathematically, the epidemiologic concepts of prevalence, incidence (including both incidence density and cumulative incidence), ratio and difference measures of association, attributable risk percent, population attributable risk, sensitivity, specificity, and positive and negative predictive values;
- be familiar with the sources of epidemiologic data, and strengths and limitations of different data sources;
- be able to describe a public health problem in terms of person, place, and time
- be able to define epidemiologic study designs -- ecologic (correlational), cross-sectional, cohort, case-control, and experimental (intervention) studies -- and compare their strengths and weaknesses;
  - be able to assess and choose appropriate study designs to evaluate public health issues;
  - be able to define and discuss the relationship of random error, systematic error, bias, the types of bias -- selection, information, and confounding bias -- and methods of bias control;
  - be familiar with the concept of effect modification and how it differs from confounding;
- be able to define, contrast, and apply the concepts of validity and generality while reviewing epidemiologic studies;
- be able to define and apply the epidemiologic criteria of causality, principally be able to distinguish between a measure of association and evidence of causality;
• speak and read epidemiology, i.e., be able to read a study in a field you are familiar with, from the point of view of an epidemiologist, and discuss it with other professional and lay audiences;
• be familiar with the definition, process, strengths and weaknesses of disease surveillance in public health;
• identify the principles and limitations of public health screening programs
• begin to be able to make an epidemiologic decision on a public health issue, even if given conflicting research results, exercising your critical judgment based on what you have learned in this course.
• be familiar with the ethical issues pertinent to epidemiological studies

3. Reading Materials

The textbook for this course is Aschengrau & Seage’s *Essentials of Epidemiology in Public Health, Second Edition*, Jones and Bartlett Publishers, 2008. Additional readings of published scientific studies will be assigned.

Lecture notes, assignments, and other course materials will be posted on the Blackboard Learning System course web-site. Students registered for the class can access the course material through the MyUalbany link to BLS. Assignments will be distributed as Word (.doc) files so that you can use the files as a template for typing your assignments.

4. Homework Assignments

There will be 7 homework assignments during the semester. These homework assignments will focus on the computational concepts covered in this class. Homework assignments will collected by the TA at the beginning of the class when they are due. Do not leave them in the TA office.

The day each assignment is due, a review session will be given to go over the questions and correct answers. We strongly recommend making a photocopy or print additional copy of your homework so that you can use it for in-class review. All answers will be posted to the website as well, so that you may compare the posted answers with your own.

5. Ethics Training

You will be required to take and pass the University Research Ethics web-based course. To access the course, go to https://www.citiprogram.org/default.asp, then click on "Register for the CITI Course" and follow the instructions. To receive credit you must print out and hand in the certificate of completion. You should also print out and save a second copy of the certificate for your own records.
6. Grading

Your grade in this course will be based on the two in-class exams (all closed-book), homework assignments, and completion of the ethics training. The last four digits of your student ID number are critical to know. This number will be used for exams. Note – Exams are graded blind (i.e., the only identifier is the student ID number to prevent the graders from knowing which exam belongs to which student).

Your grade will be calculated from your performance as follows:

Midterm Exam: 40%
Final Exam: 40%
Homework: 14%
CITI ethics course completion: 6%

7. Academic Dishonesty

The following is a list of acts considered to be academically dishonest and therefore unacceptable. Committing such acts is a breach of integrity and is subject to penalty. No such list can, of course, describe all possible types or degrees of academic dishonesty. Therefore this list should be viewed as a set of examples, rather than as an exhaustive list. Individual faculty members, Deans of Schools and Colleges as appropriate, and the Office of Conflict Resolution and Civic Responsibility will continue to judge each breach according to its particular context.

Plagiarism: Presenting as one's own work the work of another person (for example, the words, ideas, information, data, evidence, organizing principles, or style of presentation of someone else). Some examples of plagiarism include copying, paraphrasing, or summarizing without acknowledgment, submission of another student's work as one's own, the purchase/use of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. Students are responsible for understanding legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness.

Examples of plagiarism include: failure to acknowledge the source(s) of even a few phrases, sentences, or paragraphs; failure to acknowledge a quotation or paraphrase of paragraph-length sections of a paper; failure to acknowledge the source(s) of a major idea or the source(s) for an ordering principle; failure to acknowledge the source (quoted, paraphrased, or summarized) of major sections or passages in the paper or project; the unacknowledged use of several major ideas or extensive reliance on another person's data, evidence, or critical method; submitting as one's own work, work borrowed, stolen, or purchased from someone else.

Cheating on Examinations: Giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include collaboration of any sort during an
examination (unless specifically approved by the instructor); collaboration before an examination (when such collaboration is specifically forbidden by the instructor); the use of notes, books, or other aids during an examination (unless permitted by the instructor); arranging for another person to take an examination in one's place; looking upon someone else's examination during the examination period; intentionally allowing another student to look upon one's exam; unauthorized discussion of exam questions during the examination period; and the passing of any examination information to students who have not yet taken the examination. There can be no conversation while an examination is in progress unless specifically authorized by the instructor.

Multiple Submission: Submitting substantial portions of the same work for credit more than once without receiving the prior explicit consent of the instructor to whom the material is being submitted the second or subsequent time.

Forgery: Imitating another person's signature on academic or other official documents, including class material.

Sabotage: Willfully destroying, damaging, or stealing of another's work or working materials (including lab experiments, computer programs, term papers, digital files, or projects).

Unauthorized Collaboration: Collaborating on projects, papers, or other academic exercises when this is forbidden by the instructor(s). The default faculty assumption is that work submitted for credit is entirely one's own. At the same time, standards on appropriate and inappropriate collaboration as well as the need for collaboration vary across courses and disciplines. Therefore, students who want to confer or collaborate with one another on work receiving academic credit should seek the instructor's permission to collaborate.

Falsification: Misrepresenting material or fabricating information in an academic exercise or assignment (for example, the false or misleading citation of sources, the falsification of experimental or computer data, etc.).

Bribery: Offering or giving any article of value or service to an instructor in an attempt to receive a grade or other benefits not legitimately earned or not available to other students in the class.

Theft, Damage, or Misuse of Library or IT Resources: Removing uncharged library materials from the library, defacing or damaging library materials, intentionally displacing or hoarding materials within the library for one's unauthorized private use, or other abuse of reserve-book privileges. Any violation of the University’s Responsible Use of Information Technology policy. This includes, but is not limited to, unauthorized use of the University's or another person's computer accounts, codes, passwords, or facilities; damaging computer equipment or interfering with the operation of the computing system of the University.

Academic dishonesty will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process. For more information (please refer to the Community Rights and Responsibilities booklet).
8. Courtesy:
As a courtesy to your fellow students and faculty, the use of cell phones (including text messaging) is not allowed during class time.
9. Lecture Topics and Assignments (tentative, subject to change) – Revised on 2/8/11

<table>
<thead>
<tr>
<th>Date</th>
<th>Instructor</th>
<th>Lecture</th>
<th>Text Pages</th>
<th>Assignments</th>
</tr>
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<tbody>
<tr>
<td>1/19 W</td>
<td>Hosler &amp; Jones</td>
<td>Course Overview and Introduction to Epidemiology</td>
<td>1-32</td>
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<tr>
<td>1/24 M</td>
<td>Hosler</td>
<td>Disease Frequency and Measures of Association Part 1</td>
<td>33-53</td>
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<tr>
<td>1/26 W</td>
<td>Hosler</td>
<td>Disease Frequency and Measures of Association Part 2 &amp; Workshop Discussion #1</td>
<td>59-69</td>
<td>Read: Cowie CC, et al.</td>
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<tr>
<td>1/31 M</td>
<td>Williams Hosler</td>
<td>In-class review of HW1 Descriptive Epidemiology and Data Sources</td>
<td>99-132, 77-95</td>
<td>HW1: Incidence and prevalence</td>
</tr>
<tr>
<td>2/2 W</td>
<td></td>
<td>SNOW DAY</td>
<td></td>
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<tr>
<td>2/7 M</td>
<td>Hosler</td>
<td>Direct Standardization and Crude Rates</td>
<td>69-73</td>
<td>HW2: Incidence rates &amp; direct standardization</td>
</tr>
<tr>
<td>2/9 W</td>
<td>Williams Hosler</td>
<td>In-class Review of HW2: Surveillance</td>
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<tr>
<td>2/14 M</td>
<td>Hosler</td>
<td>Introduction to Study Designs</td>
<td>139-164</td>
<td></td>
</tr>
<tr>
<td>2/16 W</td>
<td>Williams</td>
<td>Cross-sectional and Ecologic Studies</td>
<td>(157-164)</td>
<td></td>
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<tr>
<td>2/21 &amp; 23</td>
<td></td>
<td>NO CLASSES</td>
<td></td>
<td></td>
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<tr>
<td>2/28 M</td>
<td>Jones</td>
<td>Experimental Studies &amp; Workshop Discussion #2</td>
<td>169-199</td>
<td>Read: Manson JE, et al. 2003</td>
</tr>
<tr>
<td>3/2 W</td>
<td>Jones</td>
<td>Cohort Studies Part 1</td>
<td>201-225</td>
<td></td>
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<tr>
<td>3/7 M</td>
<td>Jones</td>
<td>Cohort Studies Part 2 &amp; Workshop Discussion #3</td>
<td>(201-225)</td>
<td>Read: Baris, et al. 1996</td>
</tr>
<tr>
<td>3/9 W</td>
<td>Williams Jones</td>
<td>In-class Review of HW3 Case-Control Studies Part 1</td>
<td>229-256</td>
<td>HW3: Indirect standardization</td>
</tr>
<tr>
<td>3/16 W</td>
<td>Williams Hosler</td>
<td>In-class Review of HW4 Pre-Midterm Review Session</td>
<td></td>
<td>HW4: Odds ratio (case-control studies)</td>
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<tr>
<td>3/21 M</td>
<td></td>
<td>MIDTERM EXAMINATION</td>
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<tr>
<td>3/28 M</td>
<td>Williams Jones</td>
<td>In-class Review of HW5 Confounding and Effect Modification Part 1</td>
<td>287-302</td>
<td>HW5: Bias</td>
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<tr>
<td>3/30 W</td>
<td>Jones</td>
<td>Confounding and Effect Modification Part 2</td>
<td>343-354</td>
<td></td>
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<td>4/4 M</td>
<td>Williams Hosler</td>
<td>In-class Review of HW6 Causal Thinking Part 1</td>
<td>383-405</td>
<td>HW6: Confounding &amp; effect modification</td>
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<tr>
<td>4/11 M</td>
<td>Hosler</td>
<td>Public Health Screening part 2 &amp; Workshop Discussion #5</td>
<td>(411-437)</td>
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<tr>
<td>4/13 W</td>
<td>Williams Grubert</td>
<td>In-class Review of HW7 Latest Topic in Epidemiology</td>
<td></td>
<td>HW7: Public health screening</td>
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<tr>
<td>4/18, 20 &amp; 25</td>
<td></td>
<td>NO CLASSES</td>
<td></td>
<td></td>
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<tr>
<td>4/27 W</td>
<td>Williams</td>
<td>Research Ethics</td>
<td>441-457</td>
<td></td>
</tr>
<tr>
<td>5/2 M</td>
<td>Hosler &amp; Jones</td>
<td>Pre-Final Review Session</td>
<td></td>
<td></td>
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<tr>
<td>5/5 TH</td>
<td></td>
<td>FINAL EXAMINATION</td>
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</tbody>
</table>
Epidemiology 500
Basic Principles and Methods of Epidemiology

Syllabus
Spring 2014

1. Course Organization

Class is scheduled for 10:30-11:50 AM on Mondays and Wednesdays. Typically, there will be a lecture on an epidemiologic method or topic, a review session combined with a lecture, or small group work and discussion.

The topics of each lecture and review session, along with reading and homework assignments are listed in section 7 of the syllabus. The lectures will be held in Classroom C-4 at the School of Public Health on East Campus. The syllabus and other class forms, the lecture notes, homework and reading assignments will be available for downloading from the course website on the Blackboard Learning System (BLS).

2. Course Goals and Objectives (including MPH Competencies)

The purpose of this course is to equip public health students with the concepts and principles of epidemiology, the basic scientific discipline of public health. As defined in A Dictionary of Epidemiology, 4th edition (Oxford University Press 2001) epidemiology is the "study of the distribution and determinants of health-related states or events in specific populations, and the application of this study to the control of health problems."

In this course, you will review the basic logic of epidemiologic studies, consider some of the basic mathematical background needed in epidemiology, find out about the ongoing collection of epidemiologic data, and consider the criteria of causality. We will study the various epidemiologic study designs from a theoretical and practical point of view. We will point out the strengths, limitations, and applications of these study designs. Also, we will address the sources of error, particularly the biases that may invalidate epidemiologic studies.

Objectives and Competencies

Competencies have recently been developed by the Association of Schools of Public Health for each of the core areas in public health. They are defined as a “Core Set of Applied Knowledge, Skills, and other attributes … for the Broad Practice of Public Health”. By mastering the competencies, you will have the expertise needed to succeed in the workplace as a public health professional. In epidemiology, the core competencies are:

- Explain importance of epidemiology for informing discussion of health issues
- Describe public health problem in terms of person, place, and time
- Apply basic terminology and definitions of epidemiology
- Identify key sources of data
- Calculate basic epidemiology measures
• Evaluate strengths and limitations of epidemiologic reports
• Draw appropriate inferences from epidemiologic data
• Communicate epidemiologic information to lay and professional audiences
• Comprehend basic ethical and legal issues pertaining to epidemiologic data
• Identify principals and limitations of public health screening programs

This course is designed to address these competencies through a set of learning objectives. Specifically, by the end of this course you will:

• be able to discuss and explain the definition, history, and importance of epidemiology for informing public health decisions;
• be able to define and manipulate the basic statistical concepts of rates, ratios, odds, and proportions, and be able to do simple standardization;
• be able to define, and manipulate mathematically, the epidemiologic concepts of prevalence, incidence (including both incidence density and cumulative incidence), ratio and difference measures of association, attributable risk percent, population attributable risk, sensitivity, specificity, and positive and negative predictive values;
• be familiar with the sources of epidemiologic data, and strengths and limitations of different data sources;
• be able to describe a public health problem in terms of person, place, and time
• be able to define epidemiologic study designs -- ecologic (correlational), cross-sectional, cohort, case-control, and experimental (intervention) studies -- and compare their strengths and weaknesses;
• be able to assess and choose appropriate study designs to evaluate public health issues;
• be able to define and discuss the relationship of random error, systematic error, bias, the types of bias -- selection, information, and confounding bias -- and methods of bias control;
• be familiar with the concept of effect modification and how it differs from confounding;
• be able to define, contrast, and apply the concepts of validity and generalizability while reviewing epidemiologic studies;
• be able to define and apply the epidemiologic criteria of causality and be able to distinguish between a measure of association and evidence of causality;
• be able to read a study in a field you are familiar with, from the point of view of an epidemiologist, and discuss it with other professional and lay audiences;
• be familiar with the definition, process, strengths and weaknesses of disease surveillance in public health;
• identify the principles and limitations of public health screening programs
• begin to be able to make an epidemiologic decision on a public health issue, even if given conflicting research results, exercising your critical judgment based on what you have learned in this course.
• be familiar with the ethical issues pertinent to epidemiological studies

3. Faculty

Allison Appleton, ScD, MPH
Department of Epidemiology and Biostatistics, Room 125
Email: aappleton@albany.edu
Phone: (518) 402-0402
4. Teaching Assistant

Xiao Cong
Email: xcong@albany.edu

The teaching assistant for this course is Xiao Cong, a PhD student in Epidemiology at the School of Public Health, University at Albany. He has an office in the School of Public Health and will be available to discuss material covered in lectures and workshops.

5. Reading Materials


Website: Lecture notes, assignments, and other course materials will be posted on the Blackboard Learning System course website. Students registered for the class can access the course material through the MyUalbany link to BLS. Assignments will be distributed as Word (.doc) files so that you can use the files as a template for typing your assignments.

6. Lecture and workshops preparation

There will be 5 workshops this semester. We organize this course such that the lecture material covered in any particular week is usually followed the next week (or shortly thereafter) by a workshop on that material. Most workshops will consist of a group discussion, facilitated by a workshop leader, of a pertinent article that illustrates the concept taught in lectures the week before. This will allow you time to assimilate the concepts of epidemiology. Please do the assigned readings and questions before class. Type the answers to the workshop questions before you come to class. This will allow you to go over the ideas involved, and be ready to discuss these ideas in the workshop. Your workshop grade will be based on your written, completed questions and the quality of your workshop discussion. In order to best assess your level of effort regarding the written questions, the workshop assignments WILL BE COLLECTED for grading by the workshop leader at the end of the workshop.

The best way to learn (and evaluate if you are learning) epidemiology is by speaking it. There will be opportunity in workshops to express your ideas. Additionally, we encourage you to join a study group so that you have additional time to discuss ideas.

7. Homework Assignments

There will be 8 homework assignments during the semester. These homework assignments will focus on the computational concepts covered in this class. Homework assignments will collected by the TA at the beginning of the class when they are due. Do not leave homework assignments in the TA office. Emailed homework assignments will not be accepted. Please type all homework assignments; do not turn in hand written homework.
The day each assignment is due, a review session will be given to go over the questions and correct answers. We strongly recommend making a photocopy or print additional copy of your homework so that you can use it for in-class review. All answers will be posted to the website as well, so that you may compare the posted answers with your own.

8. Grading

Your grade in this course will be based on the three in-class exams (all closed-book), homework and workshop assignments, and completion of the ethics training. The final exam is cumulative. The last four digits of your student ID number are critical to know. This number will be used for exams. Note – Exams are graded blind (i.e., the only identifier is the student ID number to prevent the graders from knowing which exam belongs to which student).

Finally, you will be required to take and pass the University Research Ethics web-based course. To access the course, go to https://www.citiprogram.org/default.asp, then click on "Register for the CITI Course" and follow the instructions. To receive credit you must print out and hand in the certificate of completion. You should also print out and safe a second copy of the certificate for your own records.

Study Groups and Extra Credit:
The formation of study groups is an important component to your graduate education. They provide a basis for you to "speak epidemiology" with your peers which, as previously mentioned, is one of the best ways to learn epidemiology. We strongly encourage you to form study groups not only for this course but your other graduate courses as well. It is expected that these study groups provide you with the opportunity to review concepts and not for the copying of one another's homework, a waste of your time and ours. To obtain extra credit, each group will complete the study group form (available on the course website) each week that they meet. Study group forms will only be collected by the TA at class meeting times, and only at the end of class. Do not leave them in the TA office. Only study group forms for study groups meeting in the previous week will be accepted. A student will receive one extra credit point for every 6 times that he or she participates in study group, up to a maximum of two extra credit points. Falsification of the form will be grounds for failing the course.

Your grade will be calculated from your performance as follows:

Exam 1: 20%
Exam 2: 20%
Final Exam: 30%
Homework: 20%
Workshop participation: 10%

The following criteria will be used to assign grades for the course:

A) Total score for the class (see below)
B) Must pass the University research ethics requirement to receive a B or better in the course.

Total score for the class:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>95-100</td>
<td>A</td>
</tr>
<tr>
<td>90-94</td>
<td>A-</td>
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</tbody>
</table>

87-89   B+
84-86   B
80-83   B-
77-79   C+
74-76   C
70-73   C-
67-69   D+
65-66   D
64 or below   E

Dr. Appleton reserves the right to move the grading cut-points, however the cutpoints will not be changed to a lower letter grade (e.g. a 90 will not result in a grade below A-).

Cheating:
Academic dishonesty (please refer to the Community Rights and Responsibilities booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

Courtesy:
As a courtesy to your fellow students and faculty, the use of cell phones (including text messaging) is not allowed during class time. Laptops and tablets are permitted, however please refrain from going online, checking your email, going on Facebook etc. Doing so is distracting to other students.

9. Office Hours

I will hold group office hours on **Wednesdays 1:00-3:00 pm in room C-5**. I am also available to meet with students individually by appointment.

The teaching assistant, Xiao Cong, will hold office hours twice a week in his office (located in the TA offices area). He is also available to meet by appointment.

**Xiao’s office hours:**

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday</td>
<td>3-5pm</td>
</tr>
<tr>
<td>Thursday</td>
<td>3-6pm</td>
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**Important dates:**

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>2/24</td>
</tr>
<tr>
<td>Spring break</td>
<td>3/17 – 3/21</td>
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<td>No class</td>
<td>4/16</td>
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<td>No class</td>
<td>4/21</td>
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<td>Exam 2</td>
<td>4/14</td>
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<td>Final exam</td>
<td>5/7</td>
</tr>
<tr>
<td>Date</td>
<td>Topic</td>
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<td>-------</td>
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<tr>
<td>1/22</td>
<td>Course overview&lt;br&gt;Introduction to epidemiology</td>
</tr>
<tr>
<td>1/27</td>
<td>Disease frequency and measures of association</td>
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<tr>
<td>1/29</td>
<td>Comparing disease frequency</td>
</tr>
<tr>
<td>2/3</td>
<td>Crude rates, direct standardization</td>
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<tr>
<td>2/5</td>
<td>Descriptive epidemiology&lt;br&gt;Sources of public health data</td>
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<td>2/10</td>
<td>Workshop 1: Descriptive epidemiology&lt;br&gt; <em>The Descriptive Epidemiology of Autism</em></td>
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<td>Introduction to study designs</td>
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<td>3/3</td>
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<td>Case control studies</td>
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<td>3/17</td>
<td>No class – spring break!</td>
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<td>3/19</td>
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<td>Workshop 4: Case-control studies&lt;br&gt; <em>Mobile Phone Use and Risk of Meningioma</em></td>
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<td>4/21</td>
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<td>4/23</td>
<td>Public health screening</td>
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<td>4/28</td>
<td>Research ethics</td>
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<td>5/7</td>
<td>Final Exam – In Class</td>
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Epidemiology 501 - Introduction to Epidemiology
Section for Epidemiology Majors
Fall Semester, 2013

Instructor: Elizabeth Grubert
SUNY Albany
Department of Epidemiology and Biostatistics, Room 125
Email: egrubert@albany.edu
Phone: (518) 402-2362

Teaching Assistant: Angela Heisey
Department of Epidemiology, TA Office
aheisey@albany.edu

Time: Monday 1:00-2:20 and Wednesday 4:00 -5:20 PM

Place: GEC Building
Room C4

Required texts:

- Epidemiology: An Introduction
  Kenneth J. Rothman
  Oxford University Press, 2002

- Essentials of Epidemiology in Public Health, 2nd Edition
  Ann Aschengrau and George R. Seage, III
  Jones & Bartlett Publishers, 2007
Goals:
Epidemiology is the basic scientific discipline of public health. The goal of this course is to provide students who are majoring in epidemiology with the terminology, theory, and principles of epidemiology. We will emphasize the methods by which risk factors are evaluated as potential causes of health endpoints. We will study measures of disease occurrence and effect; define causation and its conceptualization; learn the basic logic of epidemiologic studies; learn how epidemiologic data are collected; learn the strengths, limitations, and biases associated with these study designs; learn the fundamental mathematical principles used in epidemiology; and discuss ethical issues in conducting epidemiologic studies.

Objectives and competencies

Competencies have recently been developed by the Association of Schools of Public Health for each of the core areas in public health. They are defined as a “Core Set of Applied Knowledge, Skills, and other attributes for the Broad Practice of Public Health”. By mastering the competencies, you will have the expertise needed to succeed in the workplace as a public health professional. In epidemiology, the core competencies are:

- Explain importance of epidemiology for informing discussion of health issues
- Describe public health problem in terms of person, place, and time
- Apply basic terminology and definitions of epidemiology
- Identify key sources of data
- Calculate basic epidemiology measures
- Evaluate strengths and limitations of epidemiologic reports
- Draw appropriate inferences from epidemiologic data
- Communicate epidemiologic information to lay and professional audiences
- Comprehend basic ethical and legal issues pertaining to epidemiologic data
- Identify principals and limitations of public health screening programs

This course is designed to address these competencies through a set of learning objectives. Specifically, by the end of this course you will:

- be able to discuss and explain the definition, history, and importance of epidemiology for informing public health decisions;
- be able to define and manipulate the basic statistical concepts of rates, ratios, odds, and proportions, and be able to do simple standardization;
- be able to define, and manipulate mathematically, the epidemiologic concepts of prevalence, incidence (including both incidence density and cumulative incidence), ratio and difference measures of association, attributable risk percent, population attributable risk, sensitivity, specificity, and positive and negative predictive values;
- be familiar with the sources of epidemiologic data, and strengths and limitations of different data sources;
- be able to describe a public health problem in terms of person, place, and time
• be able to define epidemiologic study designs -- ecologic (correlational), cross-sectional, cohort, case-control, and experimental (intervention) studies -- and compare their strengths and weaknesses;
• be able to assess and choose appropriate study designs to evaluate public health issues;
• be able to define and discuss the relationship of random error, systematic error, bias, the types of bias -- selection, information, and confounding bias -- and methods of bias control;
• be familiar with the concept of effect modification and how it differs from confounding;
• be able to define, contrast, and apply the concepts of validity and generalizibility while reviewing epidemiologic studies;
• be able to define and apply the epidemiologic criteria of causality and be able to distinguish between a measure of association and evidence of causality;
• be able to read a study in a field you are familiar with, from the point of view of an epidemiologist, and discuss it with other professional and lay audiences;
• be familiar with the definition, process, strengths and weaknesses of disease surveillance in public health;
• identify the principles and limitations of public health screening programs
• begin to be able to make an epidemiologic decision on a public health issue, even if given conflicting research results, exercising your critical judgment based on what you have learned in this course.
• be familiar with the ethical issues pertinent to epidemiological studies

Lectures:
The course will consist of two one-hour and twenty minute sessions per week, mostly in lecture format. Attendance is expected. The lectures should be interactive. Feel free to ask questions and make comments.

Workshops:
There will be 7 in-class workshops during the semester. The course is organized such that the lecture material covered in any particular week is usually followed the next week (or shortly thereafter) by a workshop on that material. Workshops will consist of a group discussion of a recent, pertinent article that illustrates the concepts taught in lectures the week before. This will allow you time to assimilate the concepts of epidemiology. Workshop answers must be typed and turned in by the assigned workshop leader. Please do the assigned readings before class. This will allow you to go over the ideas involved, and be ready to discuss these ideas in the workshop. Your workshop grade will be based on your group written, completed questions and the quality of your workshop discussion. In order to best assess your level of effort regarding the written questions, one workshop assignment for each group WILL BE COLLECTED for grading at the beginning of the our next lecture following the workshop.

The best way to learn (and evaluate if you are learning) epidemiology is by speaking it. There will be opportunity in workshops to express your ideas. Additionally, we encourage you to join a study group so that you have additional time to discuss ideas. 
**Homework Assignments:**
There will be 3 homework assignments during the semester. The homework assignments will be handed out one to two weeks prior to their due date. These homework assignments will focus on the computational concepts covered in this class.

Homework assignments are due at the beginning of the class on the due date. You are strongly encouraged to begin working on them when they are made available. The day each assignment is due, one question from the homework will be randomly selected for grading. After the assignments are handed back by the Teaching Assistant, all answers will be posted to the website. The assignments will be handed back within one week so that you can compare the posted answers with your own and discuss the assignments within your study groups. It is expected that students review their answers with their study groups prior to attending office hours.

You are expected to complete and turn in your own homework assignments. You may discuss and work through the problems with other students in the class, but your answers should be in your own words.

**General tips for homeworks:**
Be precise! Be concise! Show your work!

Late assignments carry a penalty of 10% off per day late. Homeworcks will not be accepted after the answers are posted.

**Study Groups:**
The formation of study groups is a critical component to your graduate education. They provide a basis for you to "speak epidemiology" with your peers which is one of the best ways to learn epidemiology. We strongly encourage you to form study groups not only for this course but your other graduate courses as well. It is expected that these study groups provide you with the opportunity to review concepts and not for the copying of one another's homework, a waste of your time and ours.

Study groups should be comprised of 3 to 4 students. Study group members can change throughout the semester. Each group will complete a study group form (available from the TA) each week that they meet. The study group form requires the names of the participants and topics covered. Falsification of the form will be grounds for failing the course. Students who meet in a study group during at least 12 weeks of the semester will get 2 extra percentage points added to their final grade.

**Examinations:**
There is one midterm exam and one final exam for this course.

*Midterm exam: October 30*
Final exam: December 13

Both exams are ‘in-class’ (i.e. not take-home) and closed-book. The final exam is cumulative.

If you have a conflict with either the midterm or final exam, please let the instructors know by October 1 to make alternative arrangements.

Web-site:
Lecture notes, assigned articles, homework and workshop assignments, and other course materials will be posted on the BLS course web-site. Students registered for the class can access the course material by logging on to www.albany.edu/myualbany and clicking on the link to the blackboard learning system (BLS) on the left side of the page. Follow the instructions for logging-in. Students who are not registered for the class but who would like to access the course material should see Elizabeth for a guest login. Notes and readings will primarily be posted as Adobe Acrobat files (i.e., with .pdf extensions). Homework and workshop assignments will be distributed as Word (.doc) files so that you can use the files as a template for typing your assignments.

Students are encouraged to use the discussion board on the BLS course website so that everyone in the class can benefit from other students’ questions. We will be checking the discussion board once a day to answer any questions.

Office Hours:
Elizabeth will hold group office hours on Mondays in Room C5 from 3:00pm-5:00pm

Angela will hold office hours in the TA office on the following days:
Monday 11:30 – 12:30
Wednesday 2:00 – 3:30

Students who cannot come to office hours are encouraged to make appointments with either instructor or TA to meet at other times.

Grading:
Homeworks: 15%
Workshops: 20%
Midterm exam: 30%
Final exam: 35%
Total 100%

Students who meet in a study group during at least 12 weeks of the semester will get 2 extra percentage points added to their final grade.

In order to get a grade higher than a B-, you must take and pass the University Research Ethics web-based course. To access the course, go to https://www.citiprogram.org/default.asp. Click on "Register for the CITI Course" and follow the instructions for the biomedical course. To receive credit you must print out and hand in the certificate of completion by November 24. You should also print out and save a second copy of the certificate for your own records.

**Cheating:**
Academic dishonesty (please refer to the *Community Rights and Responsibilities* booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

**Courtesy:**
Unless there is an emergency, the use of cell phones, including text messaging, is not allowed during class.

**Classes suspended:**
9/2/13—Labor day
9/4/13—Rosh Hashanah
10/14/13—Columbus day
11/27/13—Thanksgiving break
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<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>HW assignments</th>
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<tr>
<td>8/26</td>
<td>Course overview; Orientation to BLS; Historical overview</td>
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<td>Causation</td>
<td>R: ch. 1,2; A: ch 1, 15</td>
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<td>Measures of disease occurrence and effect</td>
<td>R: ch. 3; A: ch. 2, p. 59-69</td>
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<td>Descriptive epidemiology; epidemiologic datasets</td>
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<td>A: ch. 14; Article</td>
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<td>R: p. 158-62; A: p. 69-72</td>
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<td>Introduction to study designs</td>
<td>R: ch. 4; A: p. 139-157</td>
<td>HW 1 due</td>
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<td>Experimental studies and randomized controlled trials</td>
<td>R: p. 206-15; A: ch. 7</td>
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<td>WORKSHOP 2: Randomized controlled trials</td>
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<td>Cohort studies, indirect standardization</td>
<td>A: ch. 8</td>
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<td>WORKSHOP 3: Cohort studies</td>
<td>Article</td>
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<td>Case-Control Studies</td>
<td>A: Ch. 9</td>
<td>HW 2 posted</td>
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<td>WORKSHOP 4: Case-Control Studies</td>
<td>Article</td>
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<td>10/21</td>
<td>Cross-sectional studies; ecological studies</td>
<td>A: p. 157-164</td>
<td>HW 2 due</td>
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<td>10/30</td>
<td>Bias</td>
<td>R: ch. 5; A: ch. 10</td>
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<td>11/4</td>
<td>Confounding</td>
<td>R: p. 144-58, 163-7; A: ch. 11</td>
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<td>Effect modification</td>
<td>R: ch. 9; A: ch. 13</td>
<td>HW 3 and Workshop 5 posted</td>
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<td>11/11</td>
<td>Random Error and Statistics</td>
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<td>11/13</td>
<td>WORKSHOP 5: Bias, confounding, and effect modification</td>
<td>Article</td>
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<td>11/18</td>
<td>Screening</td>
<td>R: p. 198-206; A: ch. 16</td>
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<td>WORKSHOP 6: Screening</td>
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<td>Ethics in epidemiology</td>
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<td>WORKSHOP 7: Ethics</td>
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<td>Wrap-up</td>
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<td>Review for final exam</td>
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<td>FINAL EXAM</td>
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Welcome!

Hi. I am Dr. Akiko Hosler, Associate Professor in the Department of Epidemiology and Biostatistics. This is the course web site for Epi 501, Introduction to Epidemiology, at the School of Public Health, University at Albany. This course will introduce students to the principles and methods of epidemiology, the basic science of public health. This course is one of the core requirements for a Masters of Public Health degree and our certificate programs.

This course is divided into modules. It begins with Course Information and Syllabus. I recommend that you read this module as soon as possible, as it contains all the information that you need to know about the course, including how you will be evaluated. The first content module is Introduction to Epidemiology. It contains a workshop assignment that you will submit online to gain experience in how the course is organized. The other modules will follow as the course progresses. In the Discussion tool, be sure to post something interesting about yourself in the Meet Your Classmates section, read about your fellow classmates, and respond to them using the Bulletin Board.

I will be logging on most days Monday through Friday, and even some weekends, so don't hesitate to ask me a question if something isn't clear. I suggest using the Ask a Question in the Discussion tab so that your fellow students can see the question and help you out, but if your question is confidential, use the course Messages tool.

Don't be concerned if this is your first online course. If you work hard, log on often, and ask me or your classmates when you have a question you'll do fine. Although I've taught online before, the University is using a new version of Blackboard, so I'm learning it too.

Welcome and have fun!

Contact Information

<table>
<thead>
<tr>
<th>Instructor:</th>
<th>Dr. Akiko Hosler</th>
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<tbody>
<tr>
<td>Course Number:</td>
<td>HEPI501</td>
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<tr>
<td>Semester:</td>
<td>Fall 2013</td>
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<tr>
<td>Mailing Address:</td>
<td>School of Public Health, Department of Epidemiology and Biostatistics, One University</td>
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Overview

Epidemiology is the basic science of public health, and has grown dramatically over the last 50 years. Most people don't know what epidemiology is, even though it pervades our lives on a daily basis. For example, epidemiological studies make the headlines every day, including "Vioxx causes heart attacks", "Cell phone users are greater risk of brain cancer", and "Current vaccination policy questioned for H1N1 flu". The results of epidemiological studies are also used to make policy decisions that affect our daily lives, ranging from what prescription medications should be approved by the FDA to whether ingredients such as trans fats should be banned from restaurants. When your physician advises you to lose weight, stop smoking, get more exercise, and be screened for breast or colon cancer, he or she is also relying on findings from epidemiological studies that demonstrate the benefits of these health behaviors. In fact, there was even a network television show that once portrayed epidemiologists as "medical detectives"! This course will provide you with a basic understanding of what epidemiology is, how epidemiologists conduct a study, and how the results may be used to promote public health.

This course is a survey course, and is organized in learning modules, each of which present one or more specific topics. In general, the modules correspond to the chapters in the textbook. The first module is an Introduction to epidemiology. The next module is a discussion of how epidemiologists measure and compare the frequency of disease, and how they use these measures to track diseases and describe patterns. The course then progress to a discussion of the different types of studies that epidemiologists use to identify exposures or "risk factors" that are associated with disease. Other modules discuss some of the problems and issues that epidemiologists must deal with to obtain valid and reliable data, and how screening is used to detect early disease among
asymptomatic persons. Each module will have a "didactic" component that includes reading assignments from the textbook and one or more Power Point presentations that summarize "key concepts". These slides will serve as the class "lectures". Each module will also have a student-led discussion of a "case study" and/or a "workshop" assignment for you to complete online.

Course Objectives

This course is designed to teach the introductory principles of epidemiology, the fundamental science of public health. It provides the foundation for students who are interested in learning more about how to design, conduct, and evaluate epidemiological studies and investigations. For those who do not take more advanced courses in epidemiological methods, it will enable them to better understand the epidemiological studies they read in scientific journals or hear about in the popular press, and interact more effectively with epidemiologists, biostatisticians, and other public health professionals. It also will assist persons who work in biomedical fields by enhancing their knowledge of some of the key concepts and principles that underlie public health.

Competencies have recently been developed by the Association of Schools of Public Health for each of the core areas in public health. They are defined as a "Core Set of Applied Knowledge, Skills, and other Attributes ... for the Broad Practice of Public Health". By mastering the competencies, you will have the expertise needed to succeed in the workplace as a public health professional. In epidemiology, the core competencies are:

• Explain Importance of Epidemiology for Informing Discussion of Health Issues

• Describe Public Health Problem in Terms of Person, Place, and Time

• Apply Basic Terminology and Definitions of Epidemiology

• Identify Key Sources of Data

• Calculate Basic Epidemiology Measures

• Evaluate Strengths and Limitations of Epidemiologic Reports

• Draw Appropriate Inferences from Epidemiologic Data

• Communicate Epidemiologic Information to Lay and Professional Audiences

• Comprehend Basic Ethical and Legal Issues Pertaining to Epidemiologic Data

• Identify Principals and Limitations of Public Health Screening Programs
This course is designed to address these competencies through the following learning objectives:

1) Explain what epidemiology is and how it can be used;

2) Distinguish between rates, ratios, and proportions;

3) Calculate and interpret different measures of disease frequency and measures of association;

4) Define descriptive epidemiology and surveillance and recognize how they are used to identify patterns and trends in disease;

5) Differentiate between experimental, cohort, case-control, and other study designs used to identify risk factors for disease and summarize their relative strengths and weaknesses,

6) Define bias, random error, and confounding and discuss how they affect epidemiological studies and what can be done to minimize their effects;

7) Distinguish between confounding and effect modification and know what epidemiologists do to control for confounding and measure effect modification;

8) Assess the effectiveness of a screening test, using measures such as sensitivity, specificity, and positive predictive value;

9) Review, evaluate and interpret epidemiological studies and how they can be used to infer causal relationships between exposure and disease.

This course is also reading, writing, and research intensive, and uses student-led discussions as a major teaching tool. Consequently, students who successfully complete this course will be able to:

10) Critically read, write, and discuss scientific concepts and methods;

11) Search for and locate peer reviewed articles in biomedical journals using online tools such as Pub Med;

12) Develop "thought-provoking" questions and moderate discussion forums;

13) Provide constructive feedback and assistance to their fellow students.
**Textbook**

The textbook for the course is *Essentials of Epidemiology in Public Health 3rd Edition* by Ann Aschengrau and George R. Seage III. It is published by Jones and Bartlett Publishers, Sudbury, MA, copyright 2014. You can purchase the book from on-line outlets such as Amazon and Barnes and Noble. It is also available from the University at Albany bookstore, which may have a special sales day at the School of Public at the beginning of the semester, and at local bookstores. There will also be supplemental readings attached to some modules, and some modules will also have a case-study to read for discussion.

**Course Learning Activities**

**Textbook and Key Concepts**

Each of the modules is organized in a similar fashion. First, there will be overview of the module, outlining what will be covered. Reading assignments from the textbook will then be assigned. Second, there will be Power Point slides that supplement and expand upon the key concepts presented in the textbook and form the basis for the class lectures. It is important that you master the material in both the textbook and the lectures, since they both contain the information that you need to successfully complete your other assignments. A good way to test your knowledge is by reading the practice questions at the end of each chapter and checking your answers against those given at the end of the textbook.

**Workshops**

Some of the modules will also include a "workshop". These will be written homework assignments that relate to the material in the textbook and lectures, and provide you with an opportunity to apply what you have learned. Each workshop will consist of a set of questions and problems, some of which will require mathematical computations that are important in epidemiology. The first workshop will be ungraded, but afterwards your grade will be determined in part according to whether you turned in the workshop on time and made a diligent and credible effort to complete it, as well as on the accuracy of your answers. Although you can discuss the workshop with other students, we expect that you will work independently in completing them, that is, each student will submit his or her own assignment individually and not as a group. After completing the workshop, you will first submit your assignment (confidentially) to us online. After the deadline has passed, we will release the answer key in the workshop area of the learning module. We then will ask that you post your original assignment online for your classmates to see. You must then read the work of your fellow class members, and post constructive comments on two of them. The purpose is to develop class community and to learn from each other.
Case Studies

A very important part of the course will be the online discussion of a "case study" that illustrates some of the principles or methods presented in some of the modules. These case studies will be articles from peer reviewed journals, and some will focus on public health issues in New York State.

Moderator

Each case study, a student moderator will be assigned to each discussion group. The moderator will be responsible for giving the initial question 24 hours prior to the start time, encouraging other students to post high quality discussion comments, posting follow-up "critical thinking" questions, and writing a summary.

Open Forum

Students who are not a moderator need to post at least three responses to the question during the discussion period. We will monitor and evaluate the discussions, but will usually not actively participate in order to avoid unduly influencing the discussion. Consequently, it is the responsibility of the student moderator to respond to the posts of the other students and to ensure that the discussion remains relevant and on track.

Ask a Question

Use the "Ask a Question" link in the Discussion tab if you have a question, similar to raising your hand in class. If you see a question posed in this area by one of your fellow students, you should try to answer it if you can. We will answer any questions that students can not. This is the way to ask something that is not confidential in nature, for example, where can you find the answer key for a workshop or when is an assignment due.

Message

Use this feature for confidential communications with us that you do not wish to share with other students. It is the on-line equivalent of office hours, and is found in the left hand tool bar. We will also use this area for private communications with the students, so remember to check it often. It is important to know that we will use these private folders for ALL confidential discussions, so do NOT e-mail us. E-mail is not part of this course!
How You Will Be Evaluated

Student Led Discussions

Approximately 40% of your final grade for this course will be based on your participation in the online discussions of the case studies. If you are a student moderator, your discussion grade will be determined by how "thought-provoking" are the follow-up questions and how successful are you in responding to your fellow classmates and in keeping the discussion of your question relevant and on track and in providing a succinct summary of the discussion. If you are a student respondent, your discussion grade will be determined by the quality and quantity of participation. Your contributions should be thoughtful, relevant, original, and help stimulate the discussion. Responses such as "I agree" or "OK" are not acceptable. The subject line of your response should also be a complete sentence or phrase that succinctly conveys the main point of your argument. We expect that all students will respond early and often to the discussion questions – do not wait until the end of the discussion period to post your contributions, or post all of your responses on one day and then remain silent. Your success in this course depends heavily on your active participation throughout the discussion period for each module. A detailed rubric for how we will evaluate the student-led discussions is included as a subdocument in the Discussion Instructions section of each Case Study area. As mentioned in the rubric, a high quality post includes references to peer reviewed biomedical articles support your arguments.

Workshop Assignments

Approximately 30% will be based on the workshop assignment that you submit online. As we discussed earlier, this grade will be determined not only by how "correct" your answers are but also how complete, thorough, and credible an effort we perceive that you made to complete the assignment on time. In addition, your workshop grade will be affected by how useful and helpful are the comments that you make on the workshop answers submitted by your fellow students.

Final Project

Approximately 30% of the final grade will be based on a final project. For this assignment, each student will critically review an original epidemiological research article that I have selected, using a set of questions that I have prepared. I expect that each student will independently answer the questions and submit their responses by the due date. Do NOT discuss the article, questions, or your answers with other students, faculty, or anyone else except me. The purpose of the final project is to provide you with an opportunity to synthesize and integrate what you have learned throughout the course.
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<td>60 - 65</td>
<td>C</td>
</tr>
<tr>
<td>&lt; 60</td>
<td>D or less</td>
</tr>
</tbody>
</table>

We reserve the right to move the grading cut-point depending on the final distribution of points, but in no case will we move the cut-point upwards.

Finally, you are **required to take and pass the University Research Ethics web-based course**. To access this course, go to [https://www.citiprogram.org/default.asp](https://www.citiprogram.org/default.asp), then click on "Register Here" and follow the instructions. You should register as a graduate student for either the basic biomedical or basic social/behavioral module. The social/behavioral module, may be more directly applicable to epidemiology. To receive credit, you must submit through course mail a copy (PDF) of the certificate of completion. You should also save a copy of the certificate for your own records. **We must receive your certificate on or before May 8 for you to receive a grade of B or higher for the course.**

**Our Expectations**

In general, we expect that you will work diligently and devote at least as much time to this course as you would for any graduate course. Unlike solely classroom-based courses, however, online study is more student-centered than teacher-centered. Consequently, you will need to be highly motivated, self-disciplined, and an independent learner.

Specifically, we expect that each student will:

1. Log onto the course website often. We know that some of you have full-time jobs and other commitments, but it is very important that YOU LOG ON FREQUENTLY, ESPECIALLY DURING THE ONLINE DISCUSSION PERIODS. Otherwise, you will fall behind very quickly and find it very difficult to catch-up.

2. Read the textbook chapters and the Power Point slides for each module before entering the online discussions. Otherwise, you will not be able to contribute meaningfully to the discussion, and your grade will suffer accordingly.

3. Complete all online workshop assignments completely, thoroughly, and on time. We will subtract points if you do not submit an assignment, are late submitting or submit
something that we judge to be as less than a full effort. We will also subtract points if you do not make helpful or useful comments on the workshop assignments submitted by two of your fellow students.

4. You need to actively participate in the online discussion for each Module. As we noted earlier, we believe that a major portion of the learning experience in this class takes place in discussion between you and your fellow students. If you do not actively participate on a regular basis, then you will diminish your ability to comprehend the subject matter. By active participation we mean that you will ENTER THE DISCUSSION EARLY, PROVIDE MEANINGFUL INPUT, NOT MERELY RESPOND WITH "OK" OR "THAT'S RIGHT", AND MOST IMPORTANTLY CONTRIBUTE IN A POSITIVE MANNER TO THE OVERALL EXPERIENCE OF THE ENTIRE CLASS. Remember, 40% of your grade in this class is determined by the quality and quantity of your participation in discussions.

5. It is CRITICAL that the students who will moderate the discussion for the case study read the textbook chapters, Power Point slides, and case study as soon as the new module opens. We will inform students at the beginning of the course what modules they have been assigned as student discussion moderators, and post their names to remind them when their module opens.

6. We expect that each student in this class will treat his or her fellow students with respect, courtesy and dignity. This means that your comments on the workshop assignments of your classmates and in the discussion groups should be constructive and polite. Scientists often disagree with their colleagues, but it is inappropriate to express these disagreements in an unprofessional and derogatory manner. Points will be deducted from your final grade if we deem that your behavior was unprofessional.

7. We encourage collaboration among students during this course. For example, the Workshop and Case Studies online discussions are designed to foster interaction among students and have them assist one another. However, there are times when you need to work independently. Specifically, you must submit your Workshop assignment individually and there will be no collaboration among students or between students and anyone else when taking the examinations.

8. All students need to be aware of the University at Albany's standards of conduct as described in the booklet "Community Rights and Responsibilities". This document itemizes the standards related to academic dishonesty, provides complete definitions of each type of misconduct and summarizes the penalties for violations of academic integrity. Please familiarize yourself with the contents of this document. Should problems arise during this course, a lack of knowledge of the content of this document cannot be used as a defense in determining the outcome of possible violations of the standards.
Course Schedule

The course officially begins on **August 26, 2013**.

Each **module** will begin on **Saturday**, but you are free to begin reading course materials and study the contents any time. The first few weeks allows students to get used to Blackboard and also buy the textbook. Please note: State holidays, University holidays/breaks, and APHA meeting will affect the course schedule.

**Workshop assignments** are typically due by **Monday Midnight**, and you are required to post comments on workshop assignment of two other classmates in the next two days.

**Case study discussion** will open usually on **Wednesday (in the morning)** and end on **Saturday (at noon)**. If you're a moderator for the discussion, you need to post questions by Tuesday morning.

The course ends with the **final project** due on **Tuesday December 10**.

### COURSE CALENDAR AND ASSIGNMENT SCHEDULE

<table>
<thead>
<tr>
<th>Topic/Activity</th>
<th>Start</th>
<th>End</th>
<th>Assignments Due</th>
</tr>
</thead>
</table>
| 1. Getting to know and Introduction | **Aug 26** | **Spt 14** | * This Module Runs Longer Due to Labor day and University Holidays*  
**Readings**: Course Information Documents; Bulletin Board; Student Profiles in Meet Your Classmates; Aschengrau and Seage, Chapt 1 *Purchase your TEXTBOOK*  
**Key Concepts**: "Introduction and Mathematical Concepts"  
**Workshop**: 'Ratios, Proportions, and Rates"; Due Date: By September 9 (Mon) 11:59 PM for submission of Workshop Assignment. Post Comments on Workshop Assignment of Two Other Classmates in the Next Two days  
**Case Studies**: None |
| 2. Measuring and Comparing the Frequency of Disease | **Spt 14** | **Spt 21** | **Readings**: Aschengrau and Seage, Chapt 2 and 3  
**Key Concepts**: "Measures of Disease Frequency" and "Measures of Association" |
<table>
<thead>
<tr>
<th>3. Descriptive Epidemiology</th>
<th>Spt 21</th>
<th>Spt 28</th>
</tr>
</thead>
</table>
| **Workshop:** "Cumulative Incidence and Prevalence and Their Measures of Association"; Due Date: By **September 16 (Mon) 11:59 PM** for Submission of Workshop Assignment. Post Comments on Workshop Assignment of Two Other Classmates in the Next Two days.
| **Case Studies:** "HIV Prevalence in Zambia", Open Forum Starts **September 18 (Wed) 8:00 AM** and ends **September 21 (Sat) 11:59 AM** |

<table>
<thead>
<tr>
<th>4. Randomized Controlled Trials</th>
<th>Spt 28</th>
<th>Oct 5</th>
</tr>
</thead>
</table>
| **Readings:** Aschengrau and Seage, Chapt 4 and 5
| **Key Concepts:** "Descriptive Epidemiology", "Surveillance", and "Direct Standardization"
| **Workshop:** "Using Direct Standardization to Adjust Mortality Rates for Age"; Due Date: By **September 23 (Mon) 11:59 PM** for Submission of Workshop Assignment. Post Comments on Workshop Assignment of Two Classmates in the Next Two Days
| **Case Studies:** "Surveillance for Lyme Disease in USA"; Open Forum Starts **September 25 (Wed) 8:00 AM** and Ends **September 28 (Sat) 11:59 AM** |

<table>
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<tr>
<th>5. Cohort Studies</th>
<th>Oct 5</th>
<th>Oct 12</th>
</tr>
</thead>
</table>
| **Readings:** Aschengrau and Seage, Chapt 8
| **Key Concepts:** "Cohort Studies" and "Indirect Standardization"
| **Workshop:** "Indirectly Standardizing Mortality Rates for Age" Due Date: By **October 7 (Mon) 11:59 PM** for Submission of Workshop Assignment. Post Comments on Workshop Assignment of Two Classmates in the Next Two Days
| **Case Studies:** "Cardiovascular Events Associated with Rofecoxib in a Colorectal Adenoma Chemoprevention Trial"; Open Forum Starts **October 2 (Wed) 8:00 AM** and Ends **October 5 (Sat) 11:59 AM** |
**Case Studies:** "Cancer and Asbestos in Drinking Water"; Open Forum Starts **October 9 (Wed) 8:00 AM** and Ends **October 12 (Sat) 11:59 AM**  
* Workshop Due Date Change Due to Columbus Day  
**Readings:** Aschengrau and Seage, Chapt 9  
**Key Concepts:** "Case-Control Studies" and "Analysis of Case-Control Studies"  
**Workshop:** "Odds Ratios" Due Date: By **October 15 (Tue) 11:59 PM** for Submission of Workshop Assignment. Post Comments on Workshop Assignment of Two Classmates in the Next Two Days  
**Case Studies:** "Smoking and Congenital Heart Defects"; Open Forum Starts **October 16 (Wed) 8:00 AM** and Ends **October 19 (Sat) 11:59 AM** |
**Key Concepts:** "Outbreak Investigations" and "Cross-sectional and Ecologic Studies"  
**Workshop:** None  
**Case Studies:** "E Coli Outbreak in Sushi Restaurants"; Open Forum Starts **October 23 (Wed) 8:00 AM** and Ends **October 26 (Sat) 11:59 AM** |
| 8. Bias and Random Error | Oct 26-Nov 2 | **Readings:** Aschengrau and Seage, Chapt 10 and 12  
**Key Concepts:** "Random Error" and "Bias"  
**Workshop:** "Bias" Due Date: By **October 28 (Mon) 11:59 PM**. Post Comments on Workshop Assignment of Two Classmates in the Next Two Days  
**Case Studies:** "What Do We Really Know About What Makes Healthy?", Open Forum Starts **October 30 (Wed) 8:00 AM** and Ends **November 2 (Sat) 11:59 AM** |
<table>
<thead>
<tr>
<th>Module</th>
<th>Dates</th>
<th>Content</th>
</tr>
</thead>
</table>
| **9. Confounding and Effect Modification** | Nov 2 - Nov 16 | * This Module Runs Longer Due to the APHa Annual Meeting, Election Day, and Veterans day. Workshop Due Date is Also Changed<br><br>**Readings:** Aschengrau and Seage, Chapts 11 and 13<br><br>**Key Concepts:** "Confounding and Effect Modification" and "Evaluating Confounding and Effect Modification"
Workshop: "Confounding and Effect Modification" Due Date: By November 13 (Wed) 11:59 PM for Submission of Workshop Assignment. Post Comments on Workshop Assignment of Two Classmates in the Next Two Days<br><br>**Case Studies:** None |
| **10. Screening** | Nov 16 - Nov 23 | **Readings:** Aschengrau and Seage, Chapt 16<br><br>**Key Concepts:** "Screening for Disease"
Workshop: "Screening" Due Date: By November 18 (Mon) 11:59 PM for Submission of Workshop Assignment. Post Comments on Workshop Assignment of Two Classmates in the Next Two Days<br><br>**Case Studies:** "Effectiveness of Screening for Prostate Cancer"; Open Forum Starts November 20 (Wed) 8:00 AM and Ends November 23 (Sat) 11:59 AM |
| **11. Interpreting and Evaluating Epidemiological Studies** | Nov 23 - Dec 10 | * This Module Runs Longer Due to the Thanksgiving Break. Extra Time Will be Given to Work on Your Final Assignment<br><br>**Readings:** Aschengrau and Seage, Chapts 14 and 15<br><br>**Key Concepts:** "Evaluating Epidemiological Studies" and "Causal Thinking in Epidemiology"
Final Project: Due by December 10 11:59 PM |

**Discussion Moderators**

As we noted in the **Course Learning Activities** document, each discussion moderator will be responsible for submitting an initial question to class for general online discussion in the **Open Forum** 24 hours prior to the start time. The moderator is also
required to post follow-up questions and write a brief summary of the discussion and submit it online. Everyone will moderate at least once* (*exception will apply for a large class size). We will post your moderator assignment via Blackboard announcement and E-mail. Check the course schedule to see what the deadlines are for your assigned module.
COURSE PREREQUISITES: EPI 501 and STA 552 or equivalent courses

COURSE REQUIREMENTS:

There will be two in-class exams: Midterm and Final exams. Students are required to attend workshops and turn in workshop forms on the day of workshop. When a guest speaker is invited, students are required to turn in speaker forms one week after the presentation.

COURSE COMPETENCIES & OBJECTIVES

Competencies have recently been developed by the Association of Schools of Public Health for each of the core areas in public health. They are defined as a “core set of applied knowledge, skills, and other attributes … for the broad practice of public health”. By mastering the competencies, you will have the expertise needed to succeed in the workplace as a public health professional.

In epidemiology, the core competencies are:

- explain importance of epidemiology for informing discussion of health issues
- describe public health problem in terms of person, place, and time
• apply basic terminology and definitions of epidemiology
• identify key sources of data
• calculate basic epidemiology measures
• evaluate strengths and limitations of epidemiologic reports
• draw appropriate inferences from epidemiologic data
• communicate epidemiologic information to lay and professional audiences
• comprehend basic ethical and legal issues pertaining to epidemiologic data

The overall objective of this course is to develop skills and knowledge required for preparing epidemiologic study proposals, conducting epidemiologic research, and disseminating study results. Specifically, by the end of this course you will be able to…

• formulate an epidemiologic research question
• identify major sources of funding for epidemiologic research
• design the basic structure of a research proposal
• familiarize with administrative and ethical issues in epidemiologic research
• understand the process for a review of research proposals
• develop strategies for identifying and reviewing the epidemiologic literature
• learn the procedures for selecting a study population
• customize sampling procedures that are appropriate for the research objective and available resources
• evaluate selection and information bias in data collection methodology
• minimize biases in data collection
• learn how to plan data collection and conduct follow-up
• identify secondary data sources, understand their strengths and limitations
• assess reliability and validity of measures
• understand data cleaning, management, and analysis principals and techniques
• write and publish research findings in a manuscript style
• learn how manuscripts are reviewed by peer reviewers
• translate and communicate epidemiologic information to a wide variety of audiences

COURSE TEXTBOOKS & MATERIALS:

The required textbook for the course is:


Optional textbook


Lecture notes for the course will be made available on the course website (Blackboard)

Workshop and reading materials will be made available on Blackboard at least ONE WEEK before the scheduled due date.
EXAMS & GRADE:

All exams in this course will be closed-book. Exams are graded blind (i.e., the only identifier is the student ID number to prevent the graders from knowing which exam belongs to which student). The last four digits of your student ID number will be used for exams.

Your grade will be calculated from your performance as follows:

- On-time submission of workshop answers: 25%
- Workshop discussion participation: 15%
- Speaker form(s): 5%
- Midterm exam (in-class): 25%
- Final exam (in-class, cumulative): 30%.

CHEATING:

Academic dishonesty (please refer to the Community Rights and Responsibilities booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

COURTESY:

As a courtesy to your fellow students and faculty, cell phones/smart phones must be turned off and stored away from your view (e.g., Put in your pocketbook, backpack, or coat pocket). Do not place your cell phone/smart phone on the desk, chair, floor or your lap, even if it is turned off. Instructor and TA may confiscate your cell phone/smart phone for the duration of the class if you do not comply. Do not use a listening devise such as iPod while in class – no ear phones are allowed unless medically necessary. Laptop, notebook, and tablet computers are allowed only to access course materials on Blackboard or course-relevant information stored in your computer or on the Internet. Instructor and TA may monitor your screen activity and take necessary actions for an inappropriate use of your computer.

OTHER:

DO NOT use the contact function in Blackboard. Communication with course instructors and teaching assistant can be made through regular E-mail (use the E-mail addresses provided in this syllabus) or in-person meetings during designated office hours.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Lecturer</th>
<th>Reading</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 22, W</td>
<td>Course overview. Overview of the research process &amp; research goals.</td>
<td>Dr. Hosler</td>
<td>Chpts 1 &amp; 2</td>
<td></td>
</tr>
<tr>
<td>Jan 28, T</td>
<td>Overview of epidemiologic study designs</td>
<td>Dr. Hosler</td>
<td>Chpt 3</td>
<td></td>
</tr>
<tr>
<td>Jan 29, W</td>
<td>In-class discussion of research goals and design</td>
<td>Dr. Hosler</td>
<td>Taubes 2007 article</td>
<td></td>
</tr>
<tr>
<td>Feb 4, T</td>
<td>Research ethics and IRB</td>
<td>Dr. Malloy</td>
<td>Chpt 4</td>
<td></td>
</tr>
<tr>
<td>Feb 5, W</td>
<td>Formulating a research question &amp; reviewing the literature</td>
<td>Dr. Hosler</td>
<td>Chpts 5 &amp; 6</td>
<td></td>
</tr>
<tr>
<td>Feb 11, T</td>
<td>Workshop 1: Mock review of diabetes research grant applications</td>
<td>Dr. Hosler, Ms. Heisey</td>
<td>Research grant abstracts handout</td>
<td>Workshop questions</td>
</tr>
<tr>
<td>Feb 12, W</td>
<td>Sampling – principals, probability sampling</td>
<td>Dr. Hosler</td>
<td>Chpt 7 (pp.103-14) &amp; handout</td>
<td></td>
</tr>
<tr>
<td>Feb 18, T</td>
<td>Sampling – application of probability sampling, non-probability sampling</td>
<td>Dr. Hosler</td>
<td>Chpt 7 (pp.115-16) &amp; handout</td>
<td></td>
</tr>
<tr>
<td>Feb 19, W</td>
<td>Sample size &amp; power calculations</td>
<td>Dr. Malloy</td>
<td>Chpt 7 (pp.126-9)</td>
<td></td>
</tr>
<tr>
<td>Feb 25, T</td>
<td>Workshop 2: Sampling of Hispanic Community Health Study (HCHS)</td>
<td></td>
<td>HCHS study protocol handout</td>
<td>Workshop questions</td>
</tr>
<tr>
<td>Feb 26, W</td>
<td>Primary Data – questionnaire design &amp; measurement bias (1)</td>
<td>Dr. Hosler</td>
<td>Chpt 8 (pp.134-41) &amp; handout</td>
<td></td>
</tr>
<tr>
<td>Mar 4, T</td>
<td>Primary data – questionnaire design &amp; measurement bias (2)</td>
<td>Dr. Hosler</td>
<td>Chpt 8 (pp.134-41) &amp; handout</td>
<td></td>
</tr>
<tr>
<td>Mar 11, T</td>
<td>Midterm Review Session</td>
<td>Dr. Hosler, Ms. Heisey</td>
<td></td>
<td></td>
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<tr>
<td>Mar 12, W</td>
<td>Midterm Exam</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Mar 18 &amp; 19</td>
<td>No Classes (Spring Break)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Mar 25, T</td>
<td>Bio-marker data collection</td>
<td>Dr. Bloom (GS)</td>
<td>Handout TBA</td>
<td></td>
</tr>
<tr>
<td>Mar 26, W</td>
<td>Primary data – Sample recruitment &amp; retention, follow-up &amp; selection bias</td>
<td>Dr. Malloy</td>
<td>Chpt 7 (pp.117-26) &amp; Chpt 8 (pp.146-7)</td>
<td></td>
</tr>
<tr>
<td>Apr 1, T</td>
<td>Quality of measurement – reliability and validity</td>
<td>Dr. Hosler</td>
<td>Chpt 7 (pp.124-6), Chpt 8 (p.141-3)</td>
<td>Speaker form</td>
</tr>
<tr>
<td>Apr 2, W</td>
<td>Analyzing data: from raw data to analysis</td>
<td>Dr. Hosler</td>
<td>Chpt 9 (pp.160-77)</td>
<td></td>
</tr>
<tr>
<td>Apr 8, T</td>
<td>Secondary data sources</td>
<td>Dr. Hosler</td>
<td>Chpt 8 (pp.148-54)</td>
<td></td>
</tr>
<tr>
<td>Apr 9, W</td>
<td>Workshop 4 Computation exercises &amp; reliability and validity of the 4-item Perceived stress scale (PSS) among pregnant women</td>
<td>Dr. Hosler, Ms. Heisey</td>
<td>Karam, Berard, et al. 2012 paper</td>
<td>Workshop questions</td>
</tr>
<tr>
<td>Apr 15, T</td>
<td>No Classes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apr 16, W</td>
<td>Research funding &amp; review process</td>
<td>Dr. Hosler</td>
<td>Chpt 12 (pp.244-50) NIH CSR videos</td>
<td></td>
</tr>
<tr>
<td>Apr 22, T</td>
<td>Interpreting &amp; reporting results</td>
<td>Dr. Malloy</td>
<td>Chpts 10 &amp; 11</td>
<td></td>
</tr>
<tr>
<td>Apr 23, W</td>
<td>Research presentation &amp; publication Translational research</td>
<td>Ms. Heisey, Dr. Hosler</td>
<td>Chpt 12 (pp.250-8) Wooff 2008 paper</td>
<td></td>
</tr>
<tr>
<td>Apr 29, T</td>
<td>Outbreak investigation</td>
<td>Mr. Backenson (GS)</td>
<td>Handout TBA</td>
<td></td>
</tr>
<tr>
<td>Apr 30, W</td>
<td>Workshop 5 Publishing and interpreting an observational study of a controversial topic</td>
<td>Dr. Hosler, Ms. Heisey</td>
<td>Sing, et al. paper and AACE/ADA response</td>
<td>Workshop questions</td>
</tr>
<tr>
<td>May 6, T</td>
<td>Class summary, Final Review Session</td>
<td>Dr. Hosler, Ms. Heisey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>May 7, W</td>
<td>Final Exam</td>
<td></td>
<td>n/a</td>
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<tr>
<td>May 13 T</td>
<td>(Alternate exam day)</td>
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</table>
EPIDEMIOLOGY 502: PRINCIPLES AND METHODS OF EPIDEMIOLOGY II

SPRING 2014

**TIME:** 4:00 PM – 5:20 PM, Tuesdays and Wednesdays

**Place:** C4 on East Campus (Workshops will take place in C4 and C3)

**COURSE DIRECTOR:**
Akiko Hosler, Ph.D, Associate Professor
East Campus Room 147 ahosler@albany.edu

**INSTRUCTOR:**
Rachel Malloy, Ph.D, Assistant Professor
NYS DOH Corning Tower rbh02@health.state.ny.us

**TEACHING ASSISTANT:**
Angela Heisey, Ph.D. candidate
East Campus Room 144 energy14@roadrunner.com

**OFFICE HOURS:** Dr. Hosler: Tue. 11:00–1:00 or by appointment.
Dr. Malloy: by appointment
Ms. Heisey: Wed. 10:30–1:00 or by appointment.

**COURSE PREREQUISITES:** EPI 501 and STA 552 or equivalent courses

**COURSE REQUIREMENTS:**

There will be two in-class exams: Midterm and Final exams. Students are required to attend workshops and turn in workshop forms on the day of workshop. When a guest speaker is invited, students are required to turn in speaker forms one week after the presentation.

**COURSE COMPETENCIES & OBJECTIVES**

Competencies have recently been developed by the Association of Schools of Public Health for each of the core areas in public health. They are defined as a “core set of applied knowledge, skills, and other attributes … for the broad practice of public health”. By mastering the competencies, you will have the expertise needed to succeed in the workplace as a public health professional.

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COURSE TEXTBOOKS & MATERIALS:

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- Guest speaker form: 5%
- Midterm exam (in-class): 25%
- Final exam (in-class, cumulative): 30%.

ACADEMIC DISHONESTY:

The following is a list of acts considered to be academically dishonest and therefore unacceptable. Committing such acts is a breach of integrity and is subject to penalty. No such list can, of course, describe all possible types or degrees of academic dishonesty. Therefore this list should be viewed as a set of examples, rather than as an exhaustive list. Individual faculty members, Deans of Schools and Colleges as appropriate, and the Office of Conflict Resolution and Civic Responsibility will continue to judge each breach according to its particular context.

Plagiarism: Presenting as one's own work the work of another person (for example, the words, ideas, information, data, evidence, organizing principles, or style of presentation of someone else). Some examples of plagiarism include copying, paraphrasing, or summarizing without acknowledgment, submission of another student's work as one's own, the purchase/use of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. Students are responsible for understanding legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness.

Examples of plagiarism include: failure to acknowledge the source(s) of even a few phrases, sentences, or paragraphs; failure to acknowledge a quotation or paraphrase of paragraph-length sections of a paper; failure to acknowledge the source(s) of a major idea or the source(s) for an ordering principle; failure to acknowledge the source (quoted, paraphrased, or summarized) of major sections or passages in the paper or project; the unacknowledged use of several major ideas or extensive reliance on another person's data, evidence, or critical method; submitting as one's own work, work borrowed, stolen, or purchased from someone else.

Cheating on Examinations: Giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include collaboration of any sort during an examination (unless specifically approved by the instructor); collaboration before an examination (when such collaboration is specifically forbidden by the instructor); the use of notes, books, or other aids during an examination (unless permitted by the instructor); arranging for another person to take an examination in one's place; looking upon someone else's examination during the examination period; intentionally allowing another student to look upon one's exam; unauthorized discussion of exam questions during the examination period; and the passing of any examination information to students who have not yet taken the examination.
There can be no conversation while an examination is in progress unless specifically authorized by the instructor.

Multiple Submission: Submitting substantial portions of the same work for credit more than once without receiving the prior explicit consent of the instructor to whom the material is being submitted the second or subsequent time.

Forgery: Imitating another person's signature on academic or other official documents, including class material.

Sabotage: Willfully destroying, damaging, or stealing of another's work or working materials (including lab experiments, computer programs, term papers, digital files, or projects).

Unauthorized Collaboration: Collaborating on projects, papers, or other academic exercises when this is forbidden by the instructor(s). The default faculty assumption is that work submitted for credit is entirely one's own. At the same time, standards on appropriate and inappropriate collaboration as well as the need for collaboration vary across courses and disciplines. Therefore, students who want to confer or collaborate with one another on work receiving academic credit should seek the instructor's permission to collaborate.

Falsification: Misrepresenting material or fabricating information in an academic exercise or assignment (for example, the false or misleading citation of sources, the falsification of experimental or computer data, etc.).

Bribery: Offering or giving any article of value or service to an instructor in an attempt to receive a grade or other benefits not legitimately earned or not available to other students in the class.

Theft, Damage, or Misuse of Library or IT Resources: Removing uncharged library materials from the library, defacing or damaging library materials, intentionally displacing or hoarding materials within the library for one's unauthorized private use, or other abuse of reserve-book privileges. Any violation of the University's Responsible Use of Information Technology policy. This includes, but is not limited to, unauthorized use of the University's or another person's computer accounts, codes, passwords, or facilities; damaging computer equipment or interfering with the operation of the computing system of the University.

Academic dishonesty will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process. For more information (please refer to the Community Rights and Responsibilities booklet)

COURTESY:

As a courtesy to your fellow students and faculty, cell phones/smart phones must be turned off and stored away from your view (eg. Put in your pocketbook, backpack, or coat pocket). Do not place your cell phone/smart phone on the desk, chair, floor or your lap, even if it is turned off. Instructor and TA may confiscate your cell phone/smart phone for the duration of the class if you do not comply. Do not use a listening devise such as iPod while in class – no ear phones are allowed unless medically necessary. Laptop, notebook, and tablet computers are allowed only to access course materials on Blackboard or course-relevant information stored in your computer or on the Internet. Instructor and TA may monitor your screen activity and take necessary actions for an inappropriate use of your computer.
OTHER:

DO NOT use the contact function in Blackboard. Communication with course instructors and teaching assistant can be made through regular E-mail (use the E-mail addresses provided in this syllabus) or in-person meetings during designated office hours.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Lecturer</th>
<th>Reading</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan 22, W</td>
<td>Course overview. Overview of the research process &amp; research goals.</td>
<td>Dr. Hosler</td>
<td>Chpts 1 &amp; 2</td>
<td></td>
</tr>
<tr>
<td>Jan 28, T</td>
<td>Overview of epidemiologic study designs</td>
<td>Dr. Hosler</td>
<td>Chpt 3</td>
<td></td>
</tr>
<tr>
<td>Jan 29, W</td>
<td>In-class discussion of research goals and design</td>
<td>Dr. Hosler</td>
<td>Taubes 2007 article</td>
<td></td>
</tr>
<tr>
<td>Feb 4, T</td>
<td>Research ethics and IRB</td>
<td>Dr. Malloy</td>
<td>Chpt 4</td>
<td></td>
</tr>
<tr>
<td>Feb 5, W</td>
<td>Formulating a research question &amp; reviewing the literature</td>
<td>Dr. Hosler</td>
<td>Chpts 5 &amp; 6</td>
<td></td>
</tr>
<tr>
<td>Feb 11, T</td>
<td><strong>Workshop 1:</strong> Mock review of diabetes research grant applications</td>
<td>Dr. Hosler &amp; Ms. Heisey</td>
<td>Research grant abstracts handout</td>
<td>Workshop questions</td>
</tr>
<tr>
<td>Feb 12, W</td>
<td>Sampling – principals, probability sampling</td>
<td>Dr. Hosler</td>
<td>Chpt 7 (pp.103-14) &amp; handout</td>
<td></td>
</tr>
<tr>
<td>Feb 18, T</td>
<td>Sampling – application of probability sampling, non-probability sampling</td>
<td>Dr. Hosler</td>
<td>Chpt 7 (pp.115-16) &amp; handout</td>
<td></td>
</tr>
<tr>
<td>Feb 19, W</td>
<td>Sample size &amp; power calculations</td>
<td>Dr. Malloy</td>
<td>Chpt 7 (pp.126-9)</td>
<td></td>
</tr>
<tr>
<td>Feb 25, T</td>
<td><strong>Workshop 2:</strong> Sampling of Hispanic Community Health Study (HCHS)</td>
<td>Dr. Hosler</td>
<td>HCHS study protocol handout</td>
<td>Workshop questions</td>
</tr>
<tr>
<td>Feb 26, W</td>
<td>Primary Data – questionnaire design &amp; measurement bias (1)</td>
<td>Dr. Hosler</td>
<td>Chpt 8 (pp.134-41) &amp; handout</td>
<td></td>
</tr>
<tr>
<td>Mar 4, T</td>
<td>Primary data – questionnaire design &amp; measurement bias (2)</td>
<td>Dr. Hosler</td>
<td>Chpt 8 (pp.134-41) &amp; handout</td>
<td></td>
</tr>
<tr>
<td>Mar 5, W</td>
<td><strong>Midterm Review Session</strong></td>
<td>Dr. Hosler &amp; Ms. Heisey</td>
<td>Midterm review sheet</td>
<td>Workshop questions</td>
</tr>
<tr>
<td>Mar 11, T</td>
<td><strong>Workshop 3:</strong> Questionnaire exercises and the development of a short health literacy questionnaire</td>
<td>Dr. Hosler &amp; Ms. Heisey</td>
<td>Chew, Bradley, et al. 2004 paper</td>
<td></td>
</tr>
<tr>
<td>Mar 12, W</td>
<td>Midterm Exam (cancelled due to weather)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar 18 &amp; 19</td>
<td>No Classes (Spring Break)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar 25, T</td>
<td><strong>Midterm Exam</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mar 26, W</td>
<td>Primary data – Data collection, follow-up &amp; selection bias</td>
<td>Dr. Malloy</td>
<td>Chpt 7 (pp.117-26)</td>
<td>Chpt 8 (pp.146-7)</td>
</tr>
<tr>
<td>Apr 1, T</td>
<td>Quality of measurement – reliability and validity</td>
<td>Dr. Hosler</td>
<td>Chpt 7 (pp.124-6),</td>
<td>Chpt 8 (p.141-3)</td>
</tr>
<tr>
<td>Apr 2, W</td>
<td>Analyzing data: from raw data to analysis, and secondary data analysis</td>
<td>Dr. Hosler</td>
<td>Chpt 9 (pp.160-77)</td>
<td>Chpt 8 (p.148-54)</td>
</tr>
<tr>
<td>Apr 8, T</td>
<td>Bio-marker data collection</td>
<td>Dr. Bloom (GS)</td>
<td>Handout TBA</td>
<td></td>
</tr>
<tr>
<td>Apr 9, W</td>
<td><strong>Workshop 4:</strong> Computation exercises &amp; reliability and validity of the 4-item Perceived stress scale (PSS) among pregnant women</td>
<td>Dr. Hosler &amp; Ms. Heisey</td>
<td>Karam, Berard, et al. 2012 paper</td>
<td>Workshop questions</td>
</tr>
<tr>
<td>Apr 15, T</td>
<td>No Classes</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Apr 16, W</td>
<td>Research funding &amp; review process</td>
<td>Dr. Hosler</td>
<td>Chpt 12 (pp.244-50) NIH CSR videos</td>
<td>Guest Speaker Form</td>
</tr>
<tr>
<td>Apr 22, T</td>
<td>Interpreting &amp; reporting results</td>
<td>Dr. Malloy</td>
<td>Chpts 10 &amp; 11</td>
<td></td>
</tr>
<tr>
<td>Apr 23, W</td>
<td>Research presentation &amp; publication Translational research</td>
<td>Ms. Heisey</td>
<td>Chpt 12 (pp.250-8)</td>
<td>Woolf 2008 paper</td>
</tr>
<tr>
<td>Apr 29, T</td>
<td>Outbreak investigation</td>
<td>Mr. Backenson (GS)</td>
<td>Handout TBA</td>
<td></td>
</tr>
<tr>
<td>Apr 30, W</td>
<td><strong>Final Review Session</strong></td>
<td>Dr. Hosler &amp; Ms. Heisey</td>
<td>Final review sheet</td>
<td>Workshop questions</td>
</tr>
<tr>
<td>May 6, T</td>
<td><strong>Workshop 5:</strong> Publishing and interpreting an observational study of a controversial topic</td>
<td>Dr. Hosler &amp; Ms. Heisey</td>
<td>Sing, et al. paper and AACE/ADA response</td>
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</tr>
<tr>
<td>May 7, W</td>
<td><strong>Final Exam</strong></td>
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<td>6</td>
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<tr>
<td>May 13 T</td>
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</tbody>
</table>
Principles of Public Health
HEPI503, Fall 2013

Instructor
Elizabeth Grubert, DrPH

Office Hours
Wednesday 2-3 PM or by appointment
egrubert@albany.edu
Phone (518) 408-23622

Course Schedule
Class is scheduled for 9:00-11:50 Wednesdays, classroom C-3

Course Description
This course provides a basic introduction to public health concepts and practice by examining the philosophy, purpose, history, organization, functions, tools, activities and results of public health practice at the national, state, and community levels. The course also examines public health occupations and careers. Case studies and a variety of practice-related exercises will serve as a basis for student participation in real world public health problem-solving simulations. The various components of the course aim to stimulate interactions among student and instructors around important problems and issues facing public health.

Since computers and the Internet's World Wide Web are now basic tools for public health practitioners, this course also seeks to foster and enhance skills related to the use of technology for accessing and using information and communicating with colleagues. Students must individually arrange for Internet access and ensure that they have the appropriate computer hardware and software capabilities. The instructor will be available throughout the course to provide support, feedback and guidance. The method of instruction emphasizes understanding of the basic concepts through active student participation in a variety of in class and computer-mediated activities and interactions. Material presented in the various sections of the course will be linked to the reading assignments and other course resources.

Course Objectives
Overall goals for the course are for students to:

- Achieve familiarity with the various components of the public health system
- Understand interrelationships among the system's components
- Acquire the ability to apply this knowledge and understanding to important health issues and problems
- Acquire an awareness of the importance of independent reading and study
- Develop basic computer skills for accessing information and communicating with peers
- Appreciate the unique characteristics of public health practice as a social enterprise

Through this course the student will acquire basic knowledge, attitudes and skills that are important for public health practice. The course is designed to enhance seven specific competencies. As a result, students will be proficient in:

1. Describing public health as a system, including its unique and important features and their role within it, to general audiences
2. Applying measures of population health and illness, including risk factors, to community health
improvement initiatives
3. Identifying and distinguishing public health and prevention strategies from curative strategies for prevalent health problems
4. Describing the role of law and government in promoting and protecting the health of the public and identifying specific functions and roles of governmental public health agencies in assuring population health
5. Describing the public health role, and their own level of participation, in emergency responses for a range of contingencies that might arise
6. Identifying and explaining how various occupations, professions, and careers contribute to carrying out public health’s core functions and essential services, and

This course primarily addresses interdisciplinary, cross-cutting competencies for the MPH degree related to professionalism, systems thinking, leadership, and program planning (Association of Schools of Public Health, Education Committee, MPH Core Competency Development Project, Version 2.3, August 2006). A substantial number of additional competencies related to other ASPH MPH Core Competency Project domains are enhanced and/or re-enforced in this course. A complete list of the ASPH MPH core competencies addressed by this course is available.

Students are expected to participate on a regular and consistent basis, and to be responsive and respectful team members. A significant portion of the course grade is dependent on interactive projects. To receive a satisfactory grade, all students must contribute substantively to in/out class group participation and discussion throughout the semester. Much of public health work is done in teams and groups, often to which one is assigned rather than volunteered. Thus, the group work built in to the course reflects reality and is becomes an opportunity to develop teamwork skills of leadership, collaboration, cooperation, and responsibility.

Upon successful completion of this course, students will have achieved specific expectations for these competencies that are detailed in each section of the course. Since there are neither clear nor easy answers to many of the public health problems and issues examined in this course, an important over-arching objective is to encourage students to think independently and critically about the issues, rather than to assume the role of passive recipients of factual information.

**Key information for the Course**

The course is presented in sections corresponding to the chapters of the text. The pattern for each section of the course generally includes:
- a reading assignment (one or more chapters) from the text;
- individual exercises in which each student completes various practical applications of the concepts (including examination of Internet web sites and other sources for further information on topics for that session) and formulates brief responses to be submitted in class;
- in class group exercises and field trip exercise in which each student participates as part of group in developing an assignment that is then used for a class presentation and final paper.

**Grading for the Course**

Final grades are based on completion of the exercises detailed in each section of the course. All sections are equally weighted. Students will also participate in a group during this semester.

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual Exercises</td>
<td>20%</td>
</tr>
<tr>
<td>Guest speaker evaluations</td>
<td>10%</td>
</tr>
<tr>
<td>Group field trip presentation</td>
<td>20%</td>
</tr>
</tbody>
</table>
Guest speaker evaluations: The speaker evaluation form will be used as an important tool to measure the effectiveness of speaker and to measure the speaker contribution to the class objectives.

Individual Exercises: The individual exercises will include a variety of discussion questions, case studies and web search exercises. Submissions will be evaluated based on the extent to which they are submitted in a timely manner and respond in a clear and concise manner to all questions with germane content that relates to the readings, course resources, and topics for that section of the course. Consistent use of resources above and beyond the basic readings and course materials and demonstration of critical thinking skills and/or inclusion of thoughtful insights will be viewed positively when submissions are evaluated. Late and/or incomplete and/or off target (i.e., not related to readings and other course resources) will receive significant point deductions.

Group field trip presentation: Students will be randomly assigned to groups. Group participation scores for the semester will be based on two factors: the quality of the products submitted by the group and each individual’s contributions to and participation in the group throughout the semester. Individual participation points will be determined at the end of the semester, partly through peer ratings supplied by other members of the group. In addition, students who do not participate satisfactorily in their group field trip and class presentation may not receive full credit for points awarded for their group’s work products.

Final paper: Students will use the group trip field experience to create a community health assessment. The assessment will be 10 to 12 pages including the demographic information relevant to their selected health indicator profile, a comparison with statewide and national averages, the priority indicators for disease they have selected, and the intervention plan including the legal basis for their actions. An evaluation plan designed to measure outcomes and success needs also to be included.

Determination of Final Grades: Based on the sub-scores described above, the final grade for each student will be determined.

Total score for the class:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>95-100</td>
<td>A</td>
</tr>
<tr>
<td>90-94</td>
<td>A-</td>
</tr>
<tr>
<td>87-89</td>
<td>B+</td>
</tr>
<tr>
<td>84-86</td>
<td>B</td>
</tr>
<tr>
<td>80-83</td>
<td>B-</td>
</tr>
<tr>
<td>77-79</td>
<td>C+</td>
</tr>
<tr>
<td>74-76</td>
<td>C</td>
</tr>
<tr>
<td>70-73</td>
<td>C-</td>
</tr>
<tr>
<td>67-69</td>
<td>D+</td>
</tr>
<tr>
<td>65-66</td>
<td>D</td>
</tr>
<tr>
<td>64 or below</td>
<td>E</td>
</tr>
</tbody>
</table>

Dr. Grubert reserves the right to move the grading cut-points, however the cutpoints will not be changed to a lower letter grade (e.g. a 90 will not result in a grade below A-).

Readings
Reading assignments are derived from Public Health: What It Is and How It Works, 5th edition by BJ Turnock, Jones and Bartlett Publishers, 2012. Other readings and materials are identified in the instructions pertinent for each section of the course. This book should be in the SUNY Albany bookstore.
2002 Institute of Medicine (IOM) Report *The Future of the Public’s Health in the 21st Century* pp. 1-18

Executive Summary

2002 Institute of Medicine (IOM) Report *Who Will Keep the Public Healthy? Educating Public Health Professionals For the 21st Century* pp. 3-26

Summary

You will find the reports on the Institute of Medicine's website: [http://www.iom.edu](http://www.iom.edu). (After connecting with the IOM site, you will need to go to the explore by topic Public Health and Prevention section then the two reports—*The Future of the Public’s Health in the 21st Century* and *Who Will Keep the Public Healthy?: Educating Public Health Professionals for the 21st Century*—can be viewed or downloaded as PDF files/documents. Even though it may say "Read and Purchase", you don't have to purchase anything on this site. You can read this for free.)

**Course Schedule**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/28/13</td>
<td>Course introduction—History of public health</td>
</tr>
<tr>
<td>9/4/13</td>
<td>What is public health?</td>
</tr>
<tr>
<td></td>
<td>• Read Preface &amp; Chapter 1</td>
</tr>
<tr>
<td>9/11/13</td>
<td>Understanding and Measuring Health</td>
</tr>
<tr>
<td></td>
<td>• Read Chapter 2</td>
</tr>
<tr>
<td></td>
<td>• Individual Exercise #1 due</td>
</tr>
<tr>
<td>9/18/13</td>
<td>Public Health and the Health System</td>
</tr>
<tr>
<td></td>
<td>• Read Chapter 3</td>
</tr>
<tr>
<td>9/25/13</td>
<td>Closer look at health disparities</td>
</tr>
<tr>
<td></td>
<td>• Guest speakers Dwight Williams, DOH and Deborah Koivula, RN</td>
</tr>
<tr>
<td>10/2/13</td>
<td>Core functions and public health practice</td>
</tr>
<tr>
<td></td>
<td>• Read Chapter 5</td>
</tr>
<tr>
<td></td>
<td>• <em>Who Will Keep the Public Healthy?: Educating Public Health Professionals for the 21st Century</em> pp. 3-26 <a href="http://www.iom.edu">http://www.iom.edu</a></td>
</tr>
<tr>
<td></td>
<td>• Guest speaker evaluation</td>
</tr>
<tr>
<td>10/9/13</td>
<td>Infrastructure of public health</td>
</tr>
<tr>
<td></td>
<td>• Read chapter 6</td>
</tr>
<tr>
<td></td>
<td>• Individual Exercise #2 due</td>
</tr>
<tr>
<td>10/16/13</td>
<td>Public health interventions</td>
</tr>
<tr>
<td></td>
<td>• Read Chapter 7</td>
</tr>
<tr>
<td>10/23/12</td>
<td>Midterm</td>
</tr>
<tr>
<td>10/30/13</td>
<td>Global health issues</td>
</tr>
<tr>
<td></td>
<td>• Guest speaker John Justino</td>
</tr>
<tr>
<td></td>
<td>• Individual Exercise #3 due</td>
</tr>
<tr>
<td>11/6/13</td>
<td>Field trip day</td>
</tr>
</tbody>
</table>
11/13/13 Future of public health
   • Read Chapter 9
   • *The Future of the Public's Health in the 21st Century pp1-18 Executive Summary*
   • Individual Exercise #4 due

11/20/13 Law, government, emergency preparedness and response
   • Read Chapters 4 and 8
   • Guest speaker Holly Dellenbaugh, DOH

11/27/12 Class suspended

12/4/13 Group field trip presentations ---
   • Guest speaker evaluation due

12/11/12 Reading day

Monday December 16, 2013- Final paper due by 12:00 noon.
Key Information

Instructor: Maggie Gates, Sc.D.
Email: mgates@albany.edu

TA: Solita Jones
Email: sjones@albany.edu

Time & Location: Mondays and Thursdays, 4:00-5:20 pm in Classroom C4

Prerequisites: None

Required Text: *Learning SAS by Example: A Programmer’s Guide*
Ron Cody
SAS Institute, 2007

See section 4 below for recommended reference texts and websites.

1. Course Organization

Class is scheduled for Mondays and Thursdays from 4:00-5:20 pm in Classroom C4 at the School of Public Health (located at One University Place in Rensselaer). Attendance and participation in the class is expected.

The topics of each lecture along with readings and assignments are listed in section 9 of the syllabus. The syllabus and other course materials, including lecture notes and homework assignments, will be available to download from the course website on the Blackboard Learning System. Students are expected to print out the lecture notes and other course materials; paper copies will not be provided.

2. Course Goals and Objectives/Competencies

Learning Objectives
The purpose of this course is for students to develop skills using SAS software for data management and statistical analysis. Objectives include learning how to write programs to access and clean data, reading data from external files, creating and managing variables, editing and debugging SAS programs, formatting data, creating reports, and using SAS procedures for basic statistical analysis.

Competencies
This course teaches topics and skills that relate to competencies considered critical by the Association of Schools of Public Health (ASPH) for all MPH graduates (see pages 17-30 of the following document: http://www.albany.edu/MPH_Internship_Handbook_2012.pdf), including

Biostatistics
   • Use statistical software to analyze health-related data.

Epidemiology
   • Identify key sources of data for epidemiologic purposes

Communication and Informatics
   • Use information technology to access, evaluate, and interpret public health data
3. Teaching Staff

The instructor for this course is Dr. Maggie Gates. Her office is located in room 133 of the Department of Epidemiology and Biostatistics at the School of Public Health. Dr. Gates can be reached by email at mgates@albany.edu or by phone at (518) 402-0397, and is available during office hours to discuss questions (see section 7 below).

The teaching assistant for this course is Solita Jones, a doctoral student in Epidemiology and experienced SAS programmer. Solita has an office at the School of Public Health (room 144) and will be available during office hours to discuss any questions (see section 7 below). Solita can be reached by email at sjjones@albany.edu.

4. Reading Materials

The required textbook for the course is *Learning SAS by Example: A Programmer’s Guide* by Ron Cody (SAS Institute, 2007). Assigned readings from the textbook and additional assigned readings are listed in section 9.

Additional reference textbooks and websites that may be helpful include:

- *The Little SAS Book* by Lora D. Delwiche and Susan J. Slaughter (any edition)
- *The SAS Workbook and Solutions* by Ron Cody
- *Cody’s Data Cleaning Techniques* by Ron Cody
- *SAS for Epidemiologists: Applications and Methods* by Charles DiMaggio
- *Applied Statistics and the SAS Programming Language* by Cody & Smith
- *SAS System for Elementary Statistical Analysis* by Schlotzhauer & Littell

Mike Zdeb’s EPI 514 website: [http://www.albany.edu/~msz03/epi514.html](http://www.albany.edu/~msz03/epi514.html)


SAS User Group papers (available online as PDFs):
- Efficient Way to Learn SAS® with Virtually No Cost by Mirjana Stojanovic, 2003
- A Different Approach to Learning SAS® Software by Mirjana Stojanovic, 2004
- Where to Go From Here: Learning More about SAS® by Carey & Carey, 2003

Website

Lecture notes, homework assignments, and other course materials will be posted on the Blackboard Learning System course website. Students registered for the class can access the course material through the MyUalbany link to Blackboard. Course materials will be posted as PDFs.

5. Grading

Your grade in this course will be calculated based on your performance as follows:

Homework assignments: 25% (5% per assignment, lowest homework grade will be dropped)

Quizzes: 20% (lowest quiz will be dropped, remaining three quizzes will be worth 6.67% each)

Midterm exam: 30% (for students who take the optional final exam, the midterm and final exam scores will be averaged to make up 30% of the grade)

Final project: 25%

The following criteria will be used to assign grades for this course:

Total score for the class:
The instructor reserves the right to move the grading cut-points; however, the cut points will not be changed to a lower letter grade (e.g., a 90 will not result in a grade below A-).

**Homework assignments**
Homework assignments will be posted online one week before the due date. You may discuss the assignments with other students in the class, but you are expected to complete and turn in your own assignment. Homework assignments are due at the beginning of class on the due date and must be submitted in printed (hard-copy) format. Late assignments carry a penalty of 20% off per day late and will not be accepted unless the student receives an extension from the instructor before the due date.

**Quizzes and midterm exam**
The quizzes and midterm exam will be held in class and will be closed book. The majority of questions on the quizzes and midterm exam will be multiple choice and short answer. Quizzes will be cumulative but will focus on material covered since the last quiz. The midterm exam will cover all material from lectures 1-13. For the midterm exam, students may bring one 8.5”x11” piece of paper with notes on the front and back, and for quizzes 3 and 4 students may bring one additional side of notes per quiz (i.e., 1.5 double-sided sheets for quiz 3, and 2 double-sided sheets for quiz 4).

**Optional final exam**
An optional final exam will be given on Friday, December 6th from 2-4 pm in classroom C4. For students who take the optional final, the midterm and final exam scores will be averaged to make up 30% of the grade. Details of the optional final exam will be provided at least two weeks prior to the exam date.

**Final project**
The final project assignment will be posted online three weeks before the due date. The goal of the project is to synthesize material learned throughout the course and to give you additional experience using SAS. You are expected to complete the project independently and to turn in your own project; however, you may ask the teaching staff questions and may consult the lecture notes, textbooks, and online resources. The project is due at the beginning of class on Dec. 9th and must be submitted in printed (hard-copy) format. Late assignments carry a penalty of 20% off per day late and will not be accepted unless the student receives an extension from the instructor before the due date.

6. **Miscellaneous**

**Cheating**
Academic dishonesty (please refer to the *Community Rights and Responsibilities* booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

**Courtesy**
As a courtesy to the instructor and your fellow students, the use of cell phones (including text messaging) is not permitted during class time. Please remember to silence your phone before class begins.

**SAS software**
We will use SAS® OnDemand for Academics, an online SAS web editor that is provided at no cost to students enrolled in a SAS course. You will need to register for SAS® OnDemand for Academics and then access the SAS Web Editor. Here’s how to get started:

a) Access the following website: [http://support.sas.com/ondemand/index.html#account](http://support.sas.com/ondemand/index.html#account)

b) Review the information and follow the steps at this site
c) If you have questions about using SAS® OnDemand for Academics, see [http://support.sas.com/ondemand](http://support.sas.com/ondemand). Detailed instructions on how to create and activate your account will be posted on the course website.

7. Office Hours

Dr. Gates:  Mondays 12-1pm (Room C4) – Q&A  
Wednesdays 1-4pm (Computer Teaching Lab L2)  
Or by appointment

Solita Jones:  Mondays 12-4pm (Room 144)  
Tuesdays 11am-1pm (Computer Teaching Lab L2) and 2:30-4:30pm (Room 144)  
Thursdays 11am-1pm (Computer Teaching Lab L2) and 2:30-3:50pm (Room 144)

8. Lectures and Assignments

The schedule of lecture topics, readings, and assignment due dates is shown below. Changes to the schedule may occur if needed. Students will be notified of any changes to the schedule in class and on the course website.
<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture</th>
<th>Readings due</th>
<th>Assignment due</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/26</td>
<td>Lecture 1 – Course outline, intro to SAS</td>
<td>Cody ch. 1</td>
<td></td>
</tr>
<tr>
<td>8/29</td>
<td>Lecture 2 – SAS programs, debugging</td>
<td>Cody ch. 2; “Debugging 101” by Peter Knapp</td>
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<tr>
<td>9/2</td>
<td><strong>No class – Labor Day</strong></td>
<td><strong>No class – Labor Day</strong></td>
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<tr>
<td>9/5</td>
<td><strong>No class – Rosh Hashanah</strong></td>
<td><strong>No class – Rosh Hashanah</strong></td>
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<tr>
<td>9/9</td>
<td>Lecture 3 – Creating permanent SAS data sets, using libname statements</td>
<td>Cody ch. 4</td>
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<td>9/12</td>
<td>Lecture 4 – Manipulating SAS data</td>
<td>Cody ch. 7</td>
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<td>9/16</td>
<td>Lecture 5 – Manipulating SAS data (cont’d)</td>
<td>Cody ch. 8</td>
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<td>9/19</td>
<td>Lecture 6 – Manipulating SAS data (cont’d)</td>
<td>“Tips for Manipulating Data” by Marge Scerbo</td>
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<tr>
<td>9/23</td>
<td>Lecture 7 – Quiz 1; variable labels and formats</td>
<td>Cody ch. 5</td>
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<td>9/26</td>
<td>Lecture 8 – Subsetting SAS data sets</td>
<td>Cody ch. 10 (pgs. 161-170)</td>
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<td>9/30</td>
<td>Lecture 9 – Combining SAS data sets</td>
<td>Cody ch. 10 (pgs. 170-184)</td>
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<td>10/3</td>
<td>Lecture 10 – SAS procedures, basics of displaying SAS data</td>
<td>Cody ch. 14; “Basic SAS PROCedures for Generating Quick Results” by Kirk Lafler</td>
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<td>10/7</td>
<td>Lecture 11 – Quiz 2; displaying SAS data (cont’d)</td>
<td>Cody ch. 17</td>
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<td>10/10</td>
<td>Lecture 12 – Producing descriptive statistics</td>
<td>Cody ch. 16</td>
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<td><strong>No class – Columbus Day</strong></td>
<td><strong>No class – Columbus Day</strong></td>
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<td>10/17</td>
<td>Lecture 13 – Catch up/review</td>
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<td>10/21</td>
<td>Midterm exam (4:00-6:00 pm)</td>
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<td>10/24</td>
<td>Lecture 14 – Reading raw data</td>
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<td>10/28</td>
<td>Lecture 15 – Reading data from Excel spreadsheets</td>
<td>Cody ch. 6</td>
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<td>Lecture 16 – SAS functions</td>
<td>Cody ch. 11</td>
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<td>Lecture 17 – Quiz 3; SAS functions (cont’d)</td>
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<td>Lecture 18 – SAS dates</td>
<td>Cody ch. 9; “Working With SAS Date and Time Functions” by Andrew Karp</td>
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<td>Lecture 19 – Arrays</td>
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<td>Lecture 20 – Arrays (continued)</td>
<td>“Arrays Made Easy” by Steve First and Teresa Schudrowitz</td>
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<td>11/21</td>
<td>Lecture 22 – Restructuring SAS data sets</td>
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<td>11/25</td>
<td>Lecture 23 – Working with multiple observations per subject</td>
<td>Cody ch. 24</td>
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<td>11/28</td>
<td><strong>No class - Thanksgiving</strong></td>
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<td>12/2</td>
<td>Lecture 24 – Introduction to proc report</td>
<td>Cody ch. 15</td>
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<td>12/5</td>
<td>Lecture 25 – Introduction to macros</td>
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<td>12/6</td>
<td>Optional Final Exam (2-4pm in C4)</td>
<td>Optional Final</td>
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</tr>
<tr>
<td>12/9</td>
<td>Lecture 26 – Introduction to SQL</td>
<td>Cody ch. 26</td>
<td>Final project due</td>
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</thead>
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Lecture 8: p.149-150; 160-169
Lecture 9: p.168-182; 184-186
Lecture 10: Ch.7.1 – 7.3
Lecture 11: Ch.7.4 – 7.6
Lecture 12: Ch.7.7; 7.9 – 7.10
Lecture 13: Ch. 8.1 – 8.4; 8.7
Lecture 14: Ch.8.6 – 8.8; 8.10
Lecture 15: Ch 9
Lecture 16: Ch. 10.1 – 10.3
Lecture 17: Ch.10.4
Lecture 18: p. 427-431; 435-439; 442; 452-464
Lecture 19: p.516-528
6. Course schedule

<table>
<thead>
<tr>
<th>DATE</th>
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<tbody>
<tr>
<td>Jan-23</td>
<td>Lecture 1: Introduction. Populations and samples.</td>
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<tr>
<td>Jan-28</td>
<td>Lecture 2: Summarizing data-1</td>
</tr>
<tr>
<td>Jan-30</td>
<td>Lecture 3: Summarizing data-2</td>
</tr>
<tr>
<td>Feb-4</td>
<td>Lecture 4: Probability distributions-1</td>
</tr>
<tr>
<td>Feb-6</td>
<td>Lecture 5: Probability distributions-2</td>
</tr>
<tr>
<td>Feb-11</td>
<td>Computer lab and quiz #1</td>
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<tr>
<td>Feb-18</td>
<td>Lecture 6: Probability distributions-3</td>
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<td>Feb-25</td>
<td>Lecture 7: Probability distributions-4</td>
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<td>Feb-27</td>
<td>Lecture 8: One-sample inference-1</td>
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<td>Mar-4</td>
<td>Lecture 9: One-sample inference-2</td>
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<td>Computer lab and quiz #2</td>
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<td>Mar-11</td>
<td>Lecture 10: One-sample inference-3</td>
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<td>Lecture 11: One-sample inference-4</td>
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<td>Lecture 12: One-sample inference-5</td>
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<td>Lecture 13: Two-sample inference-1</td>
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<td>Apr-8</td>
<td>Lecture 14: Two-sample inference-2</td>
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<td>Apr-10</td>
<td>Lecture 15: Non-parametric methods</td>
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<td>Apr-17</td>
<td>Computer lab and quiz #4</td>
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<td>Apr-22</td>
<td>Lecture 16: Categorical data analysis-1</td>
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<td>May-1</td>
<td>Lecture 18: Correlation and regression</td>
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<td>Lecture 19 Multi-sample inference</td>
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<td>May-8</td>
<td>Computer lab and quiz #6</td>
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</table>
EPI551, Principles of statistical inference, Spring, 2014

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<tr>
<td>Feb-4</td>
<td>Lecture 4: Probability distributions-1</td>
</tr>
<tr>
<td>Feb-6</td>
<td>Lecture 5: Probability distributions-2</td>
</tr>
<tr>
<td>Feb-11</td>
<td>Computer lab and quiz #1</td>
</tr>
<tr>
<td>Feb-18</td>
<td>Lecture 6: Probability distributions-3</td>
</tr>
<tr>
<td>Feb-25</td>
<td>Lecture 7: Probability distributions-4</td>
</tr>
<tr>
<td>Feb-27</td>
<td>Lecture 8: One-sample inference-1</td>
</tr>
<tr>
<td>Mar-4</td>
<td>Lecture 9: One-sample inference-2</td>
</tr>
<tr>
<td>Mar-6</td>
<td>Computer lab and quiz #2</td>
</tr>
<tr>
<td>Mar-11</td>
<td>Lecture 10: One-sample inference-3</td>
</tr>
<tr>
<td>Mar-13</td>
<td>Midterm (2:30pm-4:30pm)</td>
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<td>Mar-25</td>
<td>Lecture 11: One-sample inference-4</td>
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<td>Mar-27</td>
<td>Lecture 12: One-sample inference-5</td>
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<tr>
<td>Apr-1</td>
<td>Computer lab and quiz #3</td>
</tr>
<tr>
<td>Apr-3</td>
<td>Lecture 13: Two-sample inference-1</td>
</tr>
<tr>
<td>Apr-8</td>
<td>Lecture 14: Two-sample inference-2</td>
</tr>
<tr>
<td>Apr-10</td>
<td>Lecture 15: Non-parametric methods</td>
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<tr>
<td>Apr-17</td>
<td>Computer lab and quiz #4</td>
</tr>
<tr>
<td>Apr-22</td>
<td>Lecture 16: Categorical data analysis-1</td>
</tr>
<tr>
<td>Apr-24</td>
<td>Lecture 17: Categorical data analysis-2</td>
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<tr>
<td>Apr-29</td>
<td>Computer lab and quiz #5</td>
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<tr>
<td>May-1</td>
<td>Lecture 18: Correlation and regression</td>
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<tr>
<td>May-6</td>
<td>Lecture 19 Multi-sample inference</td>
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<tr>
<td>May-8</td>
<td>Computer lab and quiz #6</td>
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<td>TBA</td>
<td>Final (TBA)</td>
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</tbody>
</table>
EPIDEMIOLOGY 601 – General Topics in Epidemiologic Methods
Course Outline, Fall 2013 (Class Number 9266)

Key Information

Instructor: Maggie Gates, Sc.D.
Email: mgates@albany.edu

Time & Location: Tuesdays and Thursdays, 1:00-2:20 pm in Classroom C6

Prerequisites: EPI 501 & 502 or equivalent, EPI 552 & 553 or equivalent

Required Text: *Modern Epidemiology, 3rd Edition*
Kenneth J. Rothman, Sander Greenland, and Timothy L. Lash
Lippincott Williams & Wilkins, 2008

See sections 4 and 9 below for recommended reference texts and additional required readings.

1. Course Organization

Class is scheduled for Tuesdays and Thursdays from 1:00-2:20 pm in Classroom C6 at the School of Public Health (located at One University Place in Rensselaer). Attendance and participation in the class is expected, and questions are encouraged.

The topics of each lecture along with assigned readings are listed in section 9 of the syllabus. The syllabus and other course materials, including lecture notes and assigned articles, will be available to download from the course website on the Blackboard Learning System. Students are expected to print out the lecture notes and other course materials; paper copies will not be provided.

2. Course Goals and Objectives/Competencies

Learning Objectives
The purpose of this course is to examine recent ideas and unresolved controversies regarding fundamental principles of epidemiologic measures and study design. Specific topics include causality, epidemiologic measures, interaction, matching, and the basis for improving the validity and precision of epidemiologic research. Key objectives of the course are:

1. To examine some “modern” ideas and unresolved controversies regarding fundamental principles and concepts of epidemiology;
2. To discuss the implications of the aforementioned ideas and controversies for the practice of epidemiology.

Competencies
This course teaches topics and skills that relate to competencies considered critical by the Association of Schools of Public Health (ASPH) for all MPH graduates (see pages 17-30 of the following document: [http://www.albany.edu/MPH_Internship_Handbook_2012.pdf](http://www.albany.edu/MPH_Internship_Handbook_2012.pdf)), including

Biostatistics
- Interpret results of statistical analyses found in public health studies

Epidemiology
- Describe a public health problem in terms of magnitude, person, time and place
• Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues
• Apply the basic terminology and definitions of epidemiology
• Calculate basic epidemiology measures
• Communicate epidemiologic information to lay and professional audiences
• Draw appropriate inferences from epidemiologic data
• Evaluate the strengths and limitations of epidemiologic reports

3. Faculty

The instructor for this course is Dr. Maggie Gates. Dr. Gates can be reached by email at mgates@albany.edu or by phone at (518) 402-0397. Dr. Gates is available to discuss material covered in class during office hours (see section 7 below) or by appointment.

Several guest instructors will lead one or more class sessions throughout the semester, including:
• Dr. David Strogatz, former Chair of the Department of Epidemiology and Biostatistics and current Director of Bassett Healthcare Network’s Center for Rural Community Health;
• Dr. Rachel Hart-Malloy, Assistant Professor at the University at Albany and Epidemiologist at the AIDS Institute at New York State Department of Health; and

4. Reading Materials

The required textbook for the course is Modern Epidemiology, 3rd Edition by Kenneth J. Rothman, Sander Greenland, and Timothy L. Lash (Lippincott Williams & Wilkins, 2008). Required readings are listed in section 9, and additional required readings may be assigned for selected class sessions.

Additional reference textbooks that may be helpful include:

Epidemiology: Beyond the Basics
Moyses Szkelo and F. Javier Nieto

Epidemiology: Principles and Methods
Brian MacMahon and Dimitrios Trichopoulos
Lippincott Williams & Wilkins, 1996 (2nd Edition)

Website
Lecture notes, assigned articles, and other course materials will be posted on the Blackboard Learning System course website. Students registered for the class can access the course material through the MyUAlbany link to Blackboard Learning System. Notes and readings will be posted as Adobe Acrobat files (i.e., with .pdf extensions).

5. Grading

Your grade in this course will be calculated based on your performance as follows:

1. The two in-class examinations will each contribute 30% to the final grade (60% total)

2. Each student is expected to participate in class discussion. The quality of one’s contribution to class discussion will account for 20% of the final grade
3. Each student will lead or co-lead a class session on one of the special topics in the final section of the text. The quality of the student’s presentation and performance as a discussion leader will contribute 20% to the final grade.

The following criteria will be used to assign grades for this course:

Total score for the class:
- 95-100 A
- 90-94 A-
- 87-89 B+
- 84-86 B
- 80-83 B-
- 77-79 C+
- 70-76 C
- <70 D or lower

The instructor reserves the right to move the grading cut-points; however, the cut points will not be changed to a lower letter grade (e.g., a 90 will not result in a grade below A-).

Examinations
The two examinations will be closed-book and held in class (i.e., not take-home). The second exam is cumulative but will focus on material covered after the first exam.

Student Presentations
Each student will lead or co-lead a class session on one of the special topics in the final section of the text. Students will list their top three choices for topics of interest and the instructor will assign topics based on each student’s preferences. Students should prepare to: 1) briefly present on the topic; 2) lead the class discussion; and 3) should identify a journal article related to the topic to distribute to the class, to supplement the textbook reading. Journal articles should be sent to Dr. Gates at least one week prior to the class session in which they will be discussed, for posting on the course website.

6. Miscellaneous

Cheating
Academic dishonesty (please refer to the Community Rights and Responsibilities booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

Courtesy
As a courtesy to the instructor and your fellow students, the use of cell phones (including text messaging) is not permitted during class time. Please remember to silence your phone before class begins.

7. Office Hours

Dr. Gates: Tuesdays and Thursdays from 2:30-3:30 pm, or by appointment (Room 133 in the Department of Epidemiology and Biostatistics).

8. Lectures and Assignments

The schedule of lecture topics, readings, and assignment due dates is shown below. Changes to the schedule may occur if needed. Students will be notified of any changes to the schedule in class and on the course website.
9. Schedule of Lectures and Assignments

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture</th>
<th>Readings due</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/27</td>
<td>Lecture 1 – Introduction, overview of course (Gates)</td>
<td>Rothman Ch. 1</td>
</tr>
<tr>
<td>8/29</td>
<td>Lecture 2 – Philosophy of causal inference, criteria for causality (Gates)</td>
<td>Rothman Ch. 2 (pp. 18-31), Mente et al. 2009</td>
</tr>
<tr>
<td>9/3</td>
<td>Lecture 3 – A model of causality (Gates)</td>
<td>Rothman Ch. 2 (pp. 5-18), Vanderbroucke 1988, Loomis &amp; Wing 1990</td>
</tr>
<tr>
<td>9/5</td>
<td><strong>No class – Rosh Hashanah</strong></td>
<td></td>
</tr>
<tr>
<td>9/10</td>
<td>Lecture 4 – Introduction to causal diagrams (Gates)</td>
<td>Rothman Ch. 12 (pp. 183-194), Hernán et al. 2002</td>
</tr>
<tr>
<td>9/12</td>
<td>Lecture 5 – Measures I (Gates)</td>
<td>Rothman Ch. 3 (pp. 32-46), Vanderbroucke &amp; Pearce 2012</td>
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<tr>
<td>9/17</td>
<td>Lecture 6 – Measures II (Gates)</td>
<td>Rothman Ch. 3-4 (pp. 46-60), Baylin et al. 2006, Poole 2007, Baylin et al. 2007</td>
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<tr>
<td>9/19</td>
<td>Lecture 7 – Measures III (Gates)</td>
<td>Rothman Ch. 4 (pp. 60-70), Greenland 2004</td>
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<tr>
<td>9/24</td>
<td>Lecture 8 – Interaction I (Hart-Malloy)</td>
<td>Rothman Ch. 5 (pp. 71-74), Botto &amp; Khoury 2001</td>
</tr>
<tr>
<td>9/26</td>
<td>Lecture 9 – Interaction II (Gates)</td>
<td>Rothman Ch. 5 (pp. 74-80), Knol et al. 2009</td>
</tr>
<tr>
<td>10/1</td>
<td>Lecture 10 – Causal pies and interaction, Q&amp;A for exam (Gates)</td>
<td>Rothman Ch. 5 (pp. 80-83)</td>
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<tr>
<td>10/8</td>
<td><strong>Exam 1</strong></td>
<td></td>
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<tr>
<td>10/10</td>
<td>Lecture 11 – Types of studies (Gates)</td>
<td>Rothman Ch. 6, Lawlor et al. 2004, Vanderbroucke 2004, Concato and Horwitz 2004</td>
</tr>
<tr>
<td>10/15</td>
<td>Lecture 12 – Cohort studies (Strogatz)</td>
<td>Rothman Ch. 7, Cui et al. 2011</td>
</tr>
<tr>
<td>10/17</td>
<td>Lecture 13 – Case-control studies I (Gates)</td>
<td>Rothman Ch. 8, Wacholder et al. 1992a</td>
</tr>
<tr>
<td>10/17</td>
<td>Lecture 14 – Case-control studies II (Gates)</td>
<td>Rothman Ch. 8, Mittleman et al. 1993</td>
</tr>
<tr>
<td>10/22</td>
<td>Lecture 15 – Concepts of validity I (Gates)</td>
<td>Rothman Ch. 9, Pai &amp; Kaufman Bias File 4 (read pp. 1-5 and 38-42, skim pp. 6-11)</td>
</tr>
<tr>
<td>10/24</td>
<td>Lecture 16 – Applications of causal diagrams (Gates)</td>
<td>Rothman Ch. 12 (pp. 194-209), Westreich &amp; Greenland 2013</td>
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<tr>
<td>10/29</td>
<td>Lecture 17 – Concepts of validity II (Gates)</td>
<td>Rothman Ch. 9, Pai &amp; Kaufman Bias File 6 (read pp. 1-4 and 16-17, skim pp. 18-25)</td>
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<tr>
<td>11/5</td>
<td>Lecture 18 – Precision I (Gates)</td>
<td>Rothman Ch. 10, Poole 2001</td>
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<tr>
<td>11/7</td>
<td>Lecture 20 – Accuracy/matching (Gates)</td>
<td>Rothman Ch. 10, Ioannidis 2005</td>
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<tr>
<td>11/12</td>
<td>Lecture 21 – Bias analysis, Q&amp;A for exam (Gates)</td>
<td>Rothman Ch. 11, Wacholder et al. 1992b</td>
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<tr>
<td>11/14</td>
<td><strong>Exam 2</strong></td>
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<td>11/19</td>
<td><strong>No class</strong></td>
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<tr>
<td>11/21</td>
<td>Field Methods (Gaukhar), Infectious Disease Epidemiology (Eka)</td>
<td>Assigned articles TBD; optional reading: chapters 24 and 27</td>
</tr>
<tr>
<td>11/26</td>
<td>Genetic Epidemiology (Kevin), Nutritional Epidemiology (Xiao)</td>
<td>Assigned articles TBD; optional reading: chapters 28 and 29</td>
</tr>
<tr>
<td>11/28</td>
<td><strong>No class – Thanksgiving</strong></td>
<td></td>
</tr>
<tr>
<td>12/3</td>
<td>Environmental Epidemiology (Sam), Reproductive Epi (Alicia)</td>
<td>Assigned articles TBD; optional reading: chapters 30 and 31</td>
</tr>
<tr>
<td>12/5</td>
<td>Clinical Epidemiology (Tabitha), Meta-Analysis (Michael)</td>
<td>Assigned articles TBD; optional reading: chapters 32 and 33</td>
</tr>
<tr>
<td>12/10</td>
<td><strong>No class</strong></td>
<td></td>
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</tbody>
</table>
EPIDEMIOLOGY 604 – Cancer Epidemiology
Course Outline, Spring 2014 (Class Number 9711)

Key Information

Instructor: Maggie Gates, Sc.D.
Email: mgates@albany.edu

Time & Location: Tuesdays and Thursdays, 1:00-2:20 pm in Classroom C3

Prerequisites: EPI 501


1. Course Organization

Class is scheduled for Tuesdays and Thursdays from 1:00-2:20 pm in Classroom C3 at the School of Public Health (located at One University Place in Rensselaer). Attendance and participation in the class is expected.

The topics of each lecture along with readings and assignments are listed in section 8 of the syllabus. The syllabus and other course materials, including lecture notes and assignments, will be available to download from the course website on the Blackboard Learning System. Students are expected to print out the lecture notes and other course materials; paper copies will not be provided.

2. Course Goals and Objectives/Competencies

Learning Objectives

The purpose of this course is to review concepts and methodological issues central to the conduct of epidemiologic studies of cancer. Topics covered in the course will include: the descriptive epidemiology of cancer in the United States and internationally; an overview of the molecular and cellular basis of cancer; the classification and nomenclature of cancer; the epidemiology and natural history of several major malignancies; a review of several major categories of causative factors in the etiology of cancer and their potential mechanisms; and topics related to the role of epidemiology in cancer diagnosis and control including cancer screening, treatment, outcomes, and disparities.

Below are some key learning objectives for the course. By the end of this course, students should:

- be able to explain the difference between benign and malignant tumors
- be familiar with the TNM system of staging
- be able to identify the most common cancers in males and females in the United States
- be familiar with cancer registries and their roles in etiologic studies and cancer surveillance
- be familiar with the molecular mechanisms underlying carcinogenesis
- be able to describe issues related to surveillance of cancer
- be able to explain the issues involved in conducting a cancer cluster investigation
- be able to explain possible mechanisms by which etiologic agents or risk factors (e.g., genetics or family history, environmental or occupational exposures, hormones, viruses, diet, and tobacco) exert a carcinogenic effect; list cancers that have been shown to be associated with specific risk factors
- understand the principles of screening for chronic disease and the role of screening in cancer control
Competencies
This course teaches topics and skills that relate to competencies considered critical by the Association of Schools of Public Health (ASPH) for all MPH graduates (see pages 17-30 of the following document: http://www.albany.edu/MPH_Internship_Handbook_2012.pdf), including

Epidemiology
- Identify key sources of data for epidemiologic purposes
- Identify the principles and limitations of public health screening programs
- Describe a public health problem in terms of magnitude, person, time and place
- Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues
- Apply the basic terminology and definitions of epidemiology
- Communicate epidemiologic information to lay and professional audiences
- Draw appropriate inferences from epidemiologic data
- Evaluate the strengths and limitations of epidemiologic reports

3. Teaching Staff

The instructor for this course is Dr. Maggie Gates. Her office is located in room 133 of the Department of Epidemiology and Biostatistics at the School of Public Health, and she can be reached by email at mgates@albany.edu or by phone at (518) 402-0397.

Several guest instructors will lead one or more class sessions throughout the semester, including:
- Dr. Frank Boscoe, Research Scientist at the New York State Cancer Registry and Research Associate Professor in the Department of Epidemiology and Biostatistics
- Dr. Alvaro Carrascal, Vice President of the American Cancer Society’s Eastern Division Health Systems and Assistant Professor in the Department of Epidemiology and Biostatistics
- Dr. Phil Nasca, Dean of the University at Albany School of Public Health
- Dr. Maria Schymura, Director of the New York State Department of Health’s Bureau of Cancer Epidemiology and the New York State Cancer Registry, and Assistant Professor in the Department of Epidemiology and Biostatistics

4. Reading Materials

Assigned readings for each class are listed in section 8; additional readings will be assigned as needed. The readings include chapters from the Nasca and Pastides textbook, review articles, and published manuscripts of epidemiologic studies. All readings except those from the textbook will be posted on the course website.

Additional reference textbooks and journals that may be of interest include:
- Cancer Epidemiology, Biomarkers & Prevention (http://cebp.aacrjournals.org/)
- Cancer Causes & Control (http://link.springer.com/journal/10552)

Website
Lecture notes, readings, assignments, and other course materials will be posted on the Blackboard Learning System course website. Students registered for the class can access the course material through the MyUalbany link to Blackboard. Course materials will be posted as PDFs.

5. Grading

Your grade in this course will be calculated based on your performance as follows:
Participation: 15%
Assignments: 30% (15% per assignment)
Research paper and brief presentation on paper topic: 55%

The following criteria will be used to assign grades for this course:

Total score for the class:
- 95-100 A
- 90-94 A-
- 87-89 B+
- 84-86 B
- 80-83 B-
- 77-79 C+
- 70-76 C
- <70 D or lower

The instructor reserves the right to move the grading cut-points; however, the cut points will not be changed to a lower letter grade (e.g., a 90 will not result in a grade below A-).

Assignments
Assignments will be posted online at least four weeks before the due date. You may discuss the assignments with other students in the class, but you are expected to complete and turn in your own assignment. Assignments are due at the beginning of class on the due date and must be submitted in printed (hard-copy) format. Late assignments carry a penalty of 20% off per day late and will not be accepted unless the student receives an extension from the instructor before the due date.

Research paper and presentation
Each student will select, with the advice and consent of the instructor, a suitable topic for a research paper. The topic should represent a research hypothesis relevant to cancer epidemiology and must be approved by March 11th. The goal of the paper is for students to gain experience evaluating and discussing current etiologic hypotheses concerning a particular type of cancer. The paper should be designed to complement, rather than duplicate, class lectures. The paper is due at the beginning of class on May 8th. Students will also prepare and give a brief (5-10 minute) presentation during the last week of class, on either May 6th or May 8th. Presentation dates will be assigned randomly.

6. Miscellaneous

Cheating
Academic dishonesty (please refer to the Community Rights and Responsibilities booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

Courtesy
As a courtesy to the instructor and your fellow students, the use of cell phones (including text messaging) is not permitted during class time. Please remember to silence your phone before class begins.

7. Office Hours

Tuesdays and Thursdays from 2:30-3:30 pm, or by appointment.

8. Schedule of Lectures and Assignments

The schedule of lecture topics, readings, and assignment due dates is shown below. Changes to the schedule or assigned readings may occur if needed. Students will be notified of any changes in class and on the course website.
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings due</th>
<th>Assignment due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/23 Th</td>
<td>Class 1 – Course overview, cancer as a public health problem</td>
<td>Edwards et al. 2013</td>
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<tr>
<td>1/30 Th</td>
<td>Class 3 – Overview of cancer biology</td>
<td>Textbook ch. 4 Hanahan &amp; Weinberg 2011</td>
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<tr>
<td>2/4 T</td>
<td>Class 4 – Cancer terminology and staging</td>
<td>Textbook ch. 2 AJCC Cancer Staging Manual 2010 ch. 1</td>
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<tr>
<td>Module 2: Epidemiology of major cancers</td>
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<tr>
<td>2/6 Th</td>
<td>Class 5 – Breast cancer</td>
<td>Breast Cancer Facts &amp; Figures 2013-2014 Chen et al. 2011</td>
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<tr>
<td>2/11 T</td>
<td>Class 6 – Prostate cancer</td>
<td>Brawley 2012 Thomas et al. 2012</td>
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<tr>
<td>2/13 Th</td>
<td>Class 7 – Lung cancer</td>
<td>Alberg et al. 2013 Paulus et al. 2010</td>
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<tr>
<td>2/18 T</td>
<td>Class 8 – Colorectal cancer</td>
<td>Colorectal Cancer Facts &amp; Figures 2011-2013 Zhang et al. 2013</td>
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<td>2/20 Th</td>
<td>No class – University holiday</td>
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<tr>
<td>Module 3: Cancer screening</td>
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<tr>
<td>2/25 T</td>
<td>Class 9 – Screening (Dr. Schymura)</td>
<td>Textbook ch. 18 Schröder et al. 2012</td>
<td>Assignment 1 due</td>
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<td>2/27 Th</td>
<td>Class 10 – Screening (Dr. Schymura)</td>
<td>Smith et al. 2014 Webb et al. 2013 Esserman et al. 2013</td>
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<tr>
<td>Module 4: Risk factors</td>
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<tr>
<td>3/4 T</td>
<td>Class 11 – Biomarkers in cancer epidemiology</td>
<td>Textbook ch. 6 Sprague et al. 2013</td>
<td></td>
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<tr>
<td>3/6 Th</td>
<td>Class 12 – Genetics</td>
<td>Textbook ch. 7 Gates et al. 2008</td>
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<tr>
<td>3/18 T</td>
<td>No class – Spring break</td>
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<tr>
<td>3/20 Th</td>
<td>No class – Spring break</td>
<td></td>
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<td>4/1 T</td>
<td>Class 17 – Tobacco</td>
<td>Textbook ch. 9 Milne et al. 2013</td>
<td>Assignment 2 due</td>
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<tr>
<td>4/3 Th</td>
<td>Class 18 – Environmental and occupational exposures</td>
<td>Textbook ch. 8 Kogevinas 2011 Langevin et al. 2013</td>
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<tr>
<td>Module 5: Cancer surveillance and control</td>
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<tr>
<td>4/10 Th</td>
<td>Class 20 – Surveillance and cancer registries (Dr. Schymura)</td>
<td>Hankey et al. 1999 Izquierdo &amp; Schoenback 2000 Thomas 2002</td>
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<tr>
<td>4/15 T</td>
<td>No class – University holiday</td>
<td></td>
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<tr>
<td>4/17 Th</td>
<td>Class 21 – Cancer clusters</td>
<td>NCI FactSheet on Cancer Clusters Thun &amp; Sinks 2004</td>
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<tr>
<td>Date</td>
<td>Day</td>
<td>Topic</td>
<td>Readings</td>
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<tr>
<td>4/22</td>
<td>T</td>
<td>Class 22 – Immunity and cancer (Dean Nasca)</td>
<td>Gawande 1999</td>
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<td>Hakim 2010</td>
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<td>Textbook ch. 13</td>
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<tr>
<td>4/24</td>
<td>Th</td>
<td>Class 23 – Disparities (Dr. Boscoe)</td>
<td>NCI FactSheet on Cancer Health Disparities</td>
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<td>Class 24 – Treatment and clinical trials</td>
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<td>Duffy et al. 2011</td>
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<td>NCI FactSheet on Cancer Clinical Trials</td>
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<td>Class 25 – Outcomes/survival</td>
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**Student Presentations**

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<tr>
<th>Date</th>
<th>Day</th>
<th>Topic</th>
<th>Readings</th>
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<tbody>
<tr>
<td>5/6</td>
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<td>Class 26 – Student presentations</td>
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<tr>
<td>5/8</td>
<td>Th</td>
<td>Class 27 – Student presentations</td>
<td>Paper due</td>
</tr>
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EPIDEMIOLOGY 605 – Infectious Disease Epidemiology

COURSE OUTLINE - FALL 2013

1. Course Organization

Class is scheduled for 2:30 p.m. to 5:20 p.m. on Tuesdays.

The topics of each class session are listed in section 11 of this outline. The dates of some topics are still being worked out; updated course schedules will be provided as the semester progresses. Class will be held in C2 at the School of Public Health, One University Place, Rensselaer. The syllabus and other class forms, lecture notes, and homework assignments will be available for downloading from Blackboard.

This course reviews infectious disease principles and the use of epidemiologic methods in the assessment of selected communicable diseases of national and international importance. Emphasis will also be given to methods of transmission, the role of surveillance, and methods of control and prevention. Specific diseases to be covered will include: tuberculosis, legionellosis, measles, Lyme disease, and syphilis as well as examples of nosocomial, foodborne, and enteric infections. Case studies, publications, and other platforms will be used extensively to give students an appreciation for the application of epidemiologic principles to this field.

Prerequisites: None, but previous courses in biology and introductory epidemiology, would be useful (check with faculty if in doubt).

2. Course Goals and Objectives (including MPH Competencies)

The goals of this course are to familiarize students with: One, general infectious disease principles; Two, the practical application of epidemiologic methods; and Three, the use of this knowledge in the prevention and control of infectious diseases.

1. General infectious disease principles. Material covered will include historical perspectives, the interaction of host, agent and environment, basic biologic factors, immunology, molecular laboratory techniques, and disease processes.

2. Epidemiologic methods. Rather than present didactic material covered in other epidemiologic methods courses, this course will review specific examples of how epidemiologic methods are directly applied to the field of infectious diseases.

3. Infectious disease prevention and control. Students will discuss how knowledge gained from epidemiologic studies on specific diseases (e.g., tuberculosis, legionellosis, hepatitis A and B, syphilis, Lyme disease, salmonellosis, West Nile Virus [WNV], Severe Acute
Respiratory Syndrome [SARS], etc.) is used to develop prevention and control strategies as well as evaluate - their effectiveness.

Through lectures, workshops, readings, and presentations, students will see how basic epidemiologic methods are applied to real world problems.

Objectives and Competencies

Competencies have recently been developed by the Association of Schools of Public Health for each of the core areas in public health. They are defined as a “Core Set of Applied Knowledge, Skills, and other Attributes...for the Broad Practice of Public Health”. By mastering the competencies, you will gain the expertise needed to pass the national exam. In this course, we will touch on several competencies, including:

- Biostatistics
  - Interpret results of statistical analyses found in public health studies.

- Epidemiology
  - Explain importance of epidemiology for informing discussion of health issues
  - Describe public health problem in terms of person, place, and time
  - Apply basic terminology and definitions of epidemiology
  - Identify key sources of data
  - Calculate basic epidemiology measures
  - Evaluate strengths and limitations of epidemiologic reports
  - Draw appropriate inferences from epidemiologic data
  - Communicate epidemiologic information to lay and professional audiences
  - Comprehend basic ethical and legal issues pertaining to epidemiologic data

- Diversity and Culture
  - Describe the roles of, history, power, privilege and structural inequality in producing health disparities.
  - Cite examples of situations where consideration of culture-specific needs resulted in a more effective modification or adaptation of a health intervention.
  - Develop public health programs and strategies responsive to the diverse cultural values and traditions of the communities being served.

- Leadership
  - Engage in dialogue and learning from others to advance public health goals.
  - Demonstrate team building, negotiation, and conflict management skills.
  - Demonstrate transparency, integrity, and honesty in all actions.
  - Apply social justice and human rights principles when addressing community needs.

- Biology
  - Specify the role of the immune system in population health.
  - Describe how behavior alters human biology.
  - Identify the ethical, social and legal issues implied by public health biology.
  - Apply evidence-based biological and molecular concepts to inform public health laws, policies, and regulations.
Integrate general biological and molecular concepts into public health.

- **Professionalism**
  - Discuss sentinel events in the history and development of the public health profession and their relevance for practice in the field.
  - Apply basic principles of ethical analysis (e.g. the Public Health Code of Ethics, human rights framework, other moral theories) to issues of public health practice and policy.
  - Apply evidence-based principles and the scientific knowledge base to critical evaluation and decision-making in public health.
  - Appreciate the importance of working collaboratively with diverse communities and constituencies (e.g. researchers, practitioners, agencies and organizations).

- **Program Planning**
  - Explain how the findings of a program evaluation can be used.

- **Systems Thinking**
  - Identify unintended consequences produced by changes made to a public health system.
  - Explain how the contexts of gender, race, poverty, history, migration, and culture are important in the design of interventions within public health systems.
  - Assess strengths and weaknesses of applying the systems approach to public health problems.

3. **Instructors**

   This course is taught by Bryon Backenson and Shelley Zansky. Subject area experts will present material in their specialty. Questions regarding administrative aspects of the course (grading, scheduling, etc.) should be addressed to Backenson.

4. **Teaching Assistant** – There is no TA for this course.

5. **Reading Materials**

   Reading materials for the course will be posted on Blackboard or distributed in class.

   There is no required textbook for the course. Two recommended reference textbooks are Heymann DL. Control of Communicable Diseases Manual, 19th edition, American Public Health Association, 2008; and Nelson KE, Williams C. Infectious Disease Epidemiology, 3rd edition, Jones & Bartlett Learning; 2013. Should students choose, these can be purchased from a variety of online sources. The Control of Communicable Diseases Manual is also available as an app for iOS and Android.

6. **Class Preparation**

   Students are expected to have thoughtfully completed readings and assignments. Discussion of current events in infectious diseases will take place in every class. It is strongly
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- Subscription to ProMed Mail: [http://www.promedmail.org/](http://www.promedmail.org/)
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Assignments must be turned in at the beginning of the class session they are due. On presentation dates, students are expected to load the computer with their presentation prior to the beginning of the class period.

7. **Problem-based learning approach**

This course uses both lectures and a problem-based learning approach. Developing critical thinking skills is an essential part of epidemiology education. As such, discussion and exercises are designed as problems to address, both individually and in groups.

8. **Grading**

Your grade in this course will be based on the outbreak computer exercise (10%), surveillance (Lyme) project (15%), debates with written summary (25%), presentation with written summary (25%), and class participation (25%).

Exercises and in-class discussions will be used to evaluate the student's ability to understand the concepts covered. The presentation on a specific infectious disease topic will measure the student's ability to apply the concepts learned to a specific example.

Academic dishonesty (please refer to the *Community Rights and Responsibilities* booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

9. **Faculty**

Bryon Backenson, MS, Investigations and Vector Surveillance Units, Bureau of Communicable Disease Control, NYSDOH; Assistant Professor, Department of Epidemiology and Biostatistics, School of Public Health, University at Albany, SUNY

Shelley Zansky, PhD, Emerging Infections Program, Bureau of Communicable Disease Control, NYSDOH; Assistant Professor, Department of Epidemiology and Biostatistics, School of Public Health, University at Albany, SUNY

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10. Office Hours

Bryon Backenson  Office hours by appointment
Empire State Plaza, Corning Tower Room 651
bpb01@health.state.ny.us (Please put Epi 605 in subject line!)
(518) 473-4439

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Empire State Plaza, Corning Tower Room 632
smz04@health.state.ny.us (Please put Epi 605 in subject line!)
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<th>Week</th>
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<tr>
<td>August 27</td>
<td>Intro to course</td>
<td>Backenson/Zansky</td>
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<td>Intro-Historic Perspective</td>
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<td><strong>Computer Scenario Due</strong></td>
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<td>Nosocomial Infections</td>
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<td>Dziewulski, Backenson, Zansky</td>
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Office hours by appointment  
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**Shelley Zansky**  
Office hours by appointment  
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smz04@health.state.ny.us (Please put Epi 605 in subject line!)  
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EPI 606: BUILT ENVIRONMENT AND HEALTH – Spring 2013

Instructor:  Dr. Akiko S. Hosler, Associate Professor of Epidemiology
GEC Rm. 147, East Campus
One University Place, Rensselaer, NY 12144-3456
E-mail: ash05@health.state.ny.us  Phone: (518) 402-1561

Teaching Assistant :  None

Time:  Monday 9:00 AM – 11:50 AM

Place:  Rm. XX, School of Public Health (East Campus), Rensselaer

Office Hours:  Wednesday 1:00 – 2:30 or by appointment

COURSE DESCRIPTIONS

“Built environment and health” is a relatively new, but fast growing multi-disciplinary paradigm with a goal to promote healthy living and prevent prevalent chronic diseases through improvement of the built environment. Based on the conceptual framework of the ecologic model of health behavior, built environment research hypothesizes that the built environment (such as street design, parks, and stores with nutritious foods) can independently influence individuals’ health behavior, by acting as a barrier or an enabler of the targeted behavior (such as physical activity and dietary behavior). Therefore modifications of the built environment can lead to collective improvement of health in the community, and this approach is believed to be more cost-efficient than conventional individual-based approaches.

This course covers a wide range of topics relating to the built environment and health, with a focus on the food retail environment. The contents of this course include 1) historical and contextual development of the built environment paradigm, 2) review of exiting methods and tools for measuring the built environment, 3) on-site assessment (field work) of the food, tobacco and walking environments 4) desk-top (online and spreadsheet) data collection and synthesis of built environment data 5) critical review of major studies in the food environment and health 6) application of built environment research into public health intervention and policy development, and 7) additional relevant topics, including GIS and spatial analysis.

No text book will be used in this course. Students will be instructed to download and read journal articles and course materials assigned by the instructor. Students are also expected to participate in fieldwork to collect built environment data. There will be a class project assignment, a final project paper, and two in-class student presentations.
OBJECTIVES AND COMPETENCIES

This course is designed to achieve a set of learning objectives. Specifically, by the end of this course you will:

- Understand the conceptual and backgrounds and historical significance of the built environment research in public health.
  - Be able to describe major historical and contemporary studies of the built environment research
- Understand major methods and tools used in the built environment assessment.
  - Be able to identify strengths and weaknesses of the existing methodologies of the built environment
- Use some of the built environment measurement tools to directly collect data
- Use the Internet and government resources to indirectly collect data
- Understand spatial disparities of the built environment and their socio-ecological and cultural correlates.
- Critically review existing studies of built environment and health and understand their implications and limitations
- Apply evidence from built environment research to public health intervention and policy development
  - Understand the importance of addressing built environment in health promotion and prevention of chronic diseases.
- Be familiar with emerging issues in the built environment paradigm and understand their implications.

Competencies have been developed by the Association of Schools of Public Health for each of the core areas in public health. They are defined as a “Core Set of Applied Knowledge, Skills, and other Attributes … for the Broad Practice of Public Health”. This course is designed to cover some of the key competency areas for Epidemiology, including:

- Identify key sources of data for epidemiologic purposes.
- Describe a public health problem in terms of magnitude, person, time and place.
- Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.
- Apply the basic terminology and definitions of epidemiology.
- Calculate basic epidemiology measures.
- Communicate epidemiologic information to lay and professional audiences.
- Draw appropriate inferences from epidemiologic data.
- Evaluate the strengths and limitations of epidemiologic reports.
GRADING

Class attendance and discussion participation       10%
Fieldwork participation                          20%
Class project workshop assignment                20%
In-class presentation (twice)                    30%
Final project paper                             20%

Total score for the class:
    95-100     A
    90-94      A-
    87-89      B+
    84-86      B
    80-83      B-
    77-79      C+
    74-76      C
    70-73      C-
    69 or lower D+ or lower

The Instructor reserves the right to move the grading cut-points, however the cut points will not be changed to a lower letter grade (e.g. a 90 will not result in a grade below A-).

ACADEMIC DISHONESTY

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sections of a paper; failure to acknowledge the source(s) of a major idea or the source(s) for an ordering principle; failure to acknowledge the source (quoted, paraphrased, or summarized) of major sections or passages in the paper or project; the unacknowledged use of several major ideas or extensive reliance on another person's data, evidence, or critical method; submitting as one's own work, work borrowed, stolen, or purchased from someone else.

Cheating on Examinations: Giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include collaboration of any sort during an examination (unless specifically approved by the instructor); collaboration before an examination (when such collaboration is specifically forbidden by the instructor); the use of notes, books, or other aids during an examination (unless permitted by the instructor); arranging for another person to take an examination in one's place; looking upon someone else's examination during the examination period; intentionally allowing another student to look upon one's exam; unauthorized discussion of exam questions during the examination period; and the passing of any examination information to students who have not yet taken the examination. There can be no conversation while an examination is in progress unless specifically authorized by the instructor.

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Bribery: Offering or giving any article of value or service to an instructor in an attempt to receive a grade or other benefits not legitimately earned or not available to other students in the class.

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codes, passwords, or facilities; damaging computer equipment or interfering with the operation of the computing system of the University.

Academic dishonesty will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process. For more information (please refer to the Community Rights and Responsibilities booklet)

COURTESY:

As a courtesy to your fellow students and faculty, cell phones/ smart phones must be turned off and stored away from your view (eg. Put in your pocketbook, backpack, or coat pocket). Do not place your cell phone /smart phone on the desk, chair, your lap, on top of your belongings, or on the floor, even if it is turned off. Instructor and TA may confiscate your cell phone/smart phone for the duration of the class if you do not comply. Do not use a listening devise such as iPod while in class – no ear phones are allowed unless medically necessary. Laptop, notebook, and tablet computers are allowed only to access course materials on the Blackboard or course-relevant information stored in your computer or on the Internet. Instructor and TA may monitor your screen activity and take necessary actions for inappropriate use of your computer.
IN-CLASS PRESENTATIONS

You’ll be assigned to do informal, two in-class presentations.

The first presentation involves describing and critically discussing a published scientific paper of a given topic. The instructor will provide you a list of several relevant papers, and you may select one from the list, or you may do your own literature search (prior instructor approval needed).

The second one will be a presentation of the preliminary findings of your final project paper.

You may use PowerPoint slides and/or handouts for the presentation. The length of the presentation is approximately 20 to 25 minutes.

Presentations are graded based on:

- Clarity of presentation
- Organization of materials
- Citations / acknowledgements of copied or downloaded materials
- Relevance of the paper chosen
- Rigorousness of scientific methods used in the paper
- Informational value (contribution to scientific knowledge)
- Responses to other students’ questions and comments

CLASS PROJECT ASSIGNMENT

The whole class will work toward the common goal of collecting the exhaustive list of food stores in Schenectady using online resources and government-issued lists of retailers.

The instructor will explain the techniques and some of the lists that require prior Freedom of Information data request.

Each student will be responsible for collecting store’s trade names, owners’ names, addresses, phone numbers and some other information, and verify the information through cross-checking lists. We will then get together to produce the final “master list” of food stores in Schenectady.

FINAL PROJECT PAPER

The project paper is due on May 11th. A structured literature review paper (about 3,000 words, 30+ references) is preferred.
HOW TO WRITE A REVIEW ARTICLE

Introduction:
Brief background and purpose of the paper

Methods:

1. Sources
Multiple electronic databases (PubMed, MEDLINE, Cochrane Registries, PsycINFO, OVID, etc.): may combine with a snowballing strategy and/or a hand search of the past 2-3 years of issues of selected journals with a high likelihood of publishing relevant articles.

2. Search Terms and Strategies
List Medical Subject Headings (MeSH) keywords used (about 20), dates of publication (eg, January 1998 to December 2008), and other limitations – English language, United States, etc.

3. Inclusion and Exclusion Criteria
Describe what are included and excluded (this is done usually by reviewing abstracts)
“Patients of minority backgrounds were either focus of studies (defined as >50%) or subgroups of larger trials where minority subject data were specifically described. We excluded reports of interventions that were not based in health care settings, involved children …”
State the number of eligible articles at each stage of inclusion/exclusion

Results
Narratives of literature review organized by subheadings. Extensive database-style tables.

Discussion
State overall purposes and a summary of findings
Describe limitations of the study
Discussions – assessment of gaps in the current knowledge, what studies are needed to fill the gap

Manuscript Checklist and Reference

PRISMA checklist for systematic review and meta-analysis can be helpful
JAMA style reference

Must attach a Table
<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Notes</th>
<th>Module in BB</th>
</tr>
</thead>
</table>
| 1/27  | **Course overview & introduction to “the built environment and health”**  
Read: Glanz (AJHP 2005)                                                                                                                                                                           |                                            | Module 1     |
| 2/3   | **Measuring the built environment (I)**  
History of food environment measurement  
Read: Glanz (Am J Prev Med 2009)  
Existing tools of built environment assessment  
Read: List of tools, USDA food dessert appendix  
How to collect, analyze and interpret FROST data  
Read: Hosler (JPHMP 2011), Hosler (Prev Chronic Dis 2008) |                                            | Module 4     |
| 2/10  | **Fieldwork 1. Nutrition environment assessment in Albany Downtown**  
Read & review: FROST manual, FROST and FROST Light tools  
Will go rain, snow or shine |                                            | Module 2     |
| 2/17  | **Measuring the built environment (II)**  
Current methodological issues  
| 2/24  | **Disparities in the built environment** – current literature  
You may select a paper from the list #1  
Student presentation #1 |                                            | Module 6     |
| 3/3   | **Linking the Built Environment with Health (I)**  
Indirect measures & health  
Read: Moore (Am J Epidemiol 2008), Rundle (Env Health Pers 2009), Bodor (J Urban Health 2010) |                                            | Module 9     |
| 3/10  | **Linking the Built Environment with Health (II)**  
GIS and spatial analysis  
**Guest speaker** (TC Yang)  
Class Project: Finding food stores in Schenectady – Data Collection Part 1  
Read: Hosler (Am J Prev Med 2010), | Class project assignment given | Module 10    |
| 3/17  | **No classes (Spring Break)**                                                                                                                                                                         |                                            |              |
| 3/24  | **Tobacco environment**  
Current literature and methodologies  
Policy development **Guest speaker** (Deepa Rajulu)  
Class Project: Finding food stores in Schenectady - Data Collection Part 2  
Class project assignment - midpoint |                                            |              |
| 3/31  | **Linking the Built Environment with Health (III)**  
Direct measures & health  
<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Description</th>
<th>Module</th>
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<tbody>
<tr>
<td>4/7</td>
<td><strong>Walking environment</strong></td>
<td>Current literature and methodologies</td>
<td>Module 11</td>
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<td></td>
<td>Walking environment in rural areas</td>
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<td></td>
<td><strong>Guest speaker (Kimmy Moore Eck)</strong></td>
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<td><strong>Read:</strong> Frost (Am J Health Prom 2010)</td>
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<td></td>
<td><strong>Class Project:</strong> Finding food stores in Schenectady - Data Collection Part 3</td>
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<td>4/14</td>
<td><strong>Application of the built environment for public health policy and action</strong></td>
<td>Class project assignment completion</td>
<td>Module 7</td>
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<td><strong>Guest speaker (Tom Talbot)</strong></td>
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<td></td>
<td></td>
<td><strong>Read:</strong> Kim (Am J Prev Med 2009)</td>
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<tr>
<td></td>
<td><strong>Class Project:</strong> Finding food stores in Schenectady - Data Synthesis</td>
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<tr>
<td>4/21</td>
<td><strong>No classes (Easter)</strong></td>
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<tr>
<td>4/28</td>
<td><strong>Fieldwork 2. walkability assessment in Albany Downtown</strong></td>
<td>May be rescheduled if rains</td>
<td>Module 3</td>
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<td></td>
<td></td>
<td><strong>Read &amp; review:</strong> WEAT-D tool and manual</td>
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<tr>
<td>5/5</td>
<td><strong>Final Project paper preliminary presentations and discussions</strong></td>
<td>Student presentation #2</td>
<td>N/A</td>
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<tr>
<td>5/11</td>
<td><strong>Final project paper due before 11:59 PM</strong></td>
<td>Send electronically</td>
<td>N/A</td>
</tr>
</tbody>
</table>
1. **Course Organization**

   Class is scheduled for 2:30-5:20 PM on Thursdays. Typically, there will be a lecture on an epidemiologic method or a chronic disease, followed by an in-class discussion.

   The topics of each lecture along with reading assignments are listed in the last page of the syllabus. The lectures will be held in Classroom 2 at the School of Public Health on East Campus. The syllabus and other class forms, and reading assignments can be also available for downloading from the course website on the Blackboard Learning System (BLS).

2. **Course Goals and Objectives**

   This course aims to explore biological mechanisms, risk factors, extent of the burden, and modern public health approaches to prevention and control of major chronic diseases.

   At the end of this course students will be able to describe individual and societal burden of major chronic diseases, explain causal mechanisms of chronic diseases using various analytical methods in epidemiology, and apply this knowledge to formulate public health strategies to prevent and control chronic diseases. Some of the topics to be cover are: epidemiology of diabetes, osteoporosis, mental disorders, cardiovascular disease, hypertension, asthma, arthritis, as well as tobacco use, nutrition, and physical activity.

   **Specific course objectives:**

   At the end of this course, students should be able to:

   1. Describe biological mechanisms and major risk factors for particular chronic diseases
   2. Understand epidemiological aspects of chronic disease and be able to point out the strengths, limitations, and applications of current chronic disease study designs.
   3. Discuss contemporary approaches to the prevention and control of chronic disease from the public health perspective
   4. Understand common applications of the basic epidemiological concepts and methods to chronic disease prevention and control programs and explain importance of epidemiology for informing discussion of these health issues
   5. Understand the importance of chronic disease surveillance programs and chronic disease registries
6. Explain how results of epidemiological studies of chronic disease can be used to evaluate chronic disease programs and interventions

7. Address the sources of error, particularly the biases that may invalidate chronic disease epidemiology study results

3. Reading Materials

The textbook for this course is Remington, Brownson and Wegner’s *Chronic Disease Epidemiology and Control, 3rd Edition*, American Public Health Association, 2010. Additional readings of published scientific studies will be assigned.

In addition, students without epidemiology background are strongly encouraged to read Chapters 1 through 3 in Bonita, Beaglehole & Kjellstrom’s *Basic Epidemiology, 2nd Edition*, WHO, 2006. A free on-line version of this book is available from the following link: [http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf](http://whqlibdoc.who.int/publications/2006/9241547073_eng.pdf)

Lecture notes, assignments, and other course materials will be posted on the Blackboard Learning System course web-site. Students registered for the class can access the course material through the MyUalbany link to BLS.

4. Midterm exam and final paper

There will be a take-home mid-term exam, which focuses on basic methodology of chronic disease epidemiology, as well as surveillance, prevention, and control of chronic disease.

Students are also required to write a final paper, which can be a journal style (literature) review paper or an NIH-style grant proposal. Typically, student would focus on one risk factor and its effect on a specific chronic disease or condition, for instance, “second-hand smoke and asthma” “sedentary lifestyle and hypertension” or “alcohol consumption and osteoporosis.” There will be in-class presentations of the papers at the end of the semester. A handout for details of the final paper will be given in class.

5. Grading

Your grade in this course will be based on take-home midterm exam, in-class discussions, presentation, and the final paper.

Your grade will be calculated from your performance as follows:

- Midterm Exam: 35%
- In-class discussions: 10%
- Presentation: 15%
- Final Paper: 40%

6. Other

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**Courtesy:**
As a courtesy to your fellow students and faculty, the use of cell phones (including text messaging) is not allowed during class time.

7. **Lecture Topics and Assignments (tentative, subject to change)**

<table>
<thead>
<tr>
<th>Date</th>
<th>Instructor</th>
<th>Lecture</th>
<th>Text Pages</th>
<th>Other</th>
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</thead>
<tbody>
<tr>
<td>9/1</td>
<td>Hosler</td>
<td>Class overview, introduction, and current issues and challenges</td>
<td>1-26</td>
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<tr>
<td>9/8</td>
<td>Grubert</td>
<td>Methods in chronic disease epidemiology</td>
<td>27-57</td>
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<tr>
<td>9/15</td>
<td>Hosler</td>
<td>intervention for chronic disease control and chronic disease surveillance</td>
<td>59-93, 95-115</td>
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<tr>
<td>9/22</td>
<td>Jeff Willet</td>
<td>Tobacco use</td>
<td>117-157</td>
<td></td>
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<tr>
<td>9/29</td>
<td><strong>NO CLASSES (Rosh Hashanah)</strong></td>
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<tr>
<td>10/6</td>
<td>Hosler</td>
<td>Diabetes</td>
<td>291-334</td>
<td>Midterm handed</td>
</tr>
<tr>
<td>10/13</td>
<td>Grubert</td>
<td>Arthritis and osteoporosis</td>
<td>573-592</td>
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<tr>
<td>10/20</td>
<td>Norelli</td>
<td>Mental disorders</td>
<td>513-530</td>
<td>Midterm due</td>
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<tr>
<td>10/27</td>
<td>Strogatz</td>
<td>Cardiovascular disease</td>
<td>383-428</td>
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<tr>
<td>11/3</td>
<td>Hosler</td>
<td>Diabetes in pregnancy and other topics</td>
<td>n/a</td>
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<tr>
<td>11/10</td>
<td>Grubert</td>
<td>Physical activity</td>
<td>200-225, 159-197</td>
<td>Final paper due</td>
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<tr>
<td></td>
<td>Hosler</td>
<td>Diet and nutrition</td>
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<tr>
<td>11/17</td>
<td>Shao Lin</td>
<td>Asthma</td>
<td>473-480</td>
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<td>Matt Mauer</td>
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<td>11/24</td>
<td><strong>NO CLASSES (Thanksgiving)</strong></td>
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<tr>
<td>12/1</td>
<td>Hosler</td>
<td>Student presentations and discussions</td>
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<tr>
<td>12/13 (Tu)</td>
<td>Final Paper Due</td>
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</tbody>
</table>

Expert guest lecturers:

**Jeff Willet, Ph.D:** Director, NYS DOH Tobacco Control Program  [jgw06@health.state.ny.us](mailto:jgw06@health.state.ny.us)

**Lisa Norelli, MD, MPH:** Director of Psychiatry, Capital District Psychiatric Center  [cdfmljn@omh.state.ny.us](mailto:cdfmljn@omh.state.ny.us)

**David Strogatz, Ph.D:** Director, Bassett Research Institute Center for Rural Community Health  [David.Strogatz@bassett.org](mailto:David.Strogatz@bassett.org)

**Shao Lin, Ph.D:** Chief, Epidemiologic Studies and Evaluation Section, NYS DOH Bureau of Environmental and Occupational Epidemiology  [sxl05@health.state.ny.us](mailto:sxl05@health.state.ny.us)
Matt Mauer, DO, MPH: Medical Director, NYS DOH Bureau of Occupational Health mpm08@health.state.ny.us
**EPIDEMIOLOGY 609: REPRODUCTIVE EPIDEMIOLOGY**

**Instructors:**  
Charlotte Druschel, M.D., M.P.H.  
ESP- Corning Tower, Room 1286  
402-7771  
cmd05@health.state.ny.us

Lawrence Schell, Ph.D.  
Office: Arts and Sciences, 116  
Mail: Arts and Sciences, 237  
442-4714  
l.schell@albany.edu

Alissa Van Zutphen  
ESP-Corning Tower, Room 1266  
402-7977  
arc05@health.state.ny.us

Office hours are by appointment.

**TIME**  
11:30 – 2:20 PM Wednesday

**PLACE**  
School of Public Health, Room C1

**COURSE PREREQUISITES:**  
Satisfactory completion of Epi 501 and Sta 552 or their equivalents or permission of instructor.

**COURSE DESCRIPTION**  
An overview by clinical and non-clinical faculty of pertinent physiological mechanisms of pregnancy and fetal growth which are critical to the understanding of epidemiological methods used to investigate adverse reproductive outcomes and normal pregnancies. Discussion of unique qualities of circumstances surrounding fertility, conception, pregnancy and its outcome in detail to show their peculiar suitability for epidemiological investigation. Exposure through actual case histories and population studies to methods used to investigate problems relevant to perinatal morbidity and mortality, maternal mortality, spontaneous and induced abortion, hypertension and infections of pregnancy and the etiology on congenital malformations.
LEARNING OBJECTIVES:
By the end of the course, the student should:

- be familiar with the standard definitions used in reproductive epidemiology;

- be able to apply standard epidemiologic study designs to reproductive epidemiology and compare their strengths and weaknesses for the different adverse pregnancy outcomes, including possible biases;

- be able to explain the different types of low birthweight and their risk factors;

- be able to explain the different types of spontaneous abortion and their risk factors;

- be able to analyze and compare the components of infant mortality and suggest strategies for improvement;

- be familiar with the criteria for teratogenesis, and be able to evaluate studies suggesting the role of environmental and occupational exposures in adverse pregnancy outcomes;

- be able to evaluate a possible cluster of adverse pregnancy outcomes;

COURSE COMPETENCIES

- Acquire advanced knowledge in the chosen field

- Read, critically evaluate, and present scientific literature, including justifying the choice of methods applied to problems and the interpretation of results obtained

- Demonstrate a command of the fundamentals and current state of the discipline sufficient to prepare a written research proposal

- Develop problem solving skills through application of knowledge to a research problem in the chosen track
- Be able to discuss and explain the definition, history, and importance of epidemiology for informing public health decisions

- Be familiar with the sources of epidemiologic data, and strengths and limitations of different data sources

- Be able to describe a public health problem in terms of person, place and time

- Be able to select an issue in reproductive epidemiology, review the literature, define a problem to be resolved and suggest an appropriate methodology for study.

**COURSE REQUIREMENTS:** Each student is expected to complete the assigned readings for the week before class, attend each class session and participate in class discussions. Grades will be based on assigned homework, a paper, and quality of class participation. Class participation is extremely important as there will be no formal presentation of the paper. Papers should follow the outline which will be distributed the first day. Papers should be original work and be referenced in a standard manner. If the paper is not turned in on (or before) the due date, the student will receive an incomplete. The first part of the paper (Background and Significance) is due April 3, 2013; the second part, Research Design and Methods) is due May 8, 2013. References should generally refer to peer-reviewed literature or reference works, please avoid references to websites (this does not mean you can not use the web for literatures searches or publication that are electronic only). Plagiarism will result in no credit for the paper. Plagiarism includes but is not limited to: presenting as one’s own work the work of another person, paraphrasing or summarizing without acknowledgment the work of others, or failure to acknowledge quotations.(See SUNY’s Community Rights & Responsibilities)

**COURSE GRADES:** The course will be graded A-E. The breakdown of how the grade will be calculated is below. Class participation includes attendance and contributions to class discussions. For additional details on the required paper, please refer to the separate instructions.

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework Assignments</td>
<td>30%</td>
</tr>
<tr>
<td>Participation</td>
<td>20%</td>
</tr>
<tr>
<td>Paper -Literature Review/Study Design</td>
<td>50%</td>
</tr>
</tbody>
</table>
COURSE READINGS: No text book is assigned. All of the listed readings are required except for background reading which are provided to fill in gaps in a student’s background. Copies of required readings will be available on electronic reserves (http://ereserves.albany.edu, password “readings”. Background readings will be in the Epidemiology office. Each week (except the first) for each required reading, please do a one paragraph write up. First, state what the ‘bottom line’ of the paper is; second write a comment on the paper. This will be included in your grade. Reference only and papers with a ** do not need to be summarized. Periodically, we will randomly ask students to present their summaries. Please refer to separate reading list.

ACADEMIC INTEGRITY: (Paraphrased from the UAlbany Statement on Academic Integrity)
Our duty to be honest, methodical and careful in the attribution of data and ideas to their sources establishes the foundations of our work. Misrepresenting or falsifying scholarship undermines the essential trust on which our community depends. Every member of the community, including both faculty and students, shares an interest in maintaining academic integrity.

Every student has the responsibility to become familiar with the standards of academic integrity at the University. Student claims of ignorance, unintentional error, or personal or academic pressures cannot be excuses for violation of academic integrity. Students are responsible for familiarizing themselves with the standards and behaving accordingly.

Violations include, but are not limited to, the following: plagiarism; cheating on exams; unauthorized collaboration; multiple submission; and falsification. Penalties include, but are not limited to, the following: a warning; lowering of an assignment/exam grade; assigning a failing grade on a paper containing plagiarized material; assigning a failing grade on any examination in which cheating occurred; lowering a course grade; or giving a failing grade in a course or other academic exercise. For further information, http://www.albany.edu/graduatebulletin/requirements_degree.htm#standards_integrity

COURSE SCHEDULE

I. BACKGROUND AND REPRODUCTIVE OUTCOMES
   Introduction/Term& concepts/Reproductive physiology
   Week 1   Epidemiology Review
             Paper Review
Week 2  
Infant Mortality  
Embryology  
**Discussion: Preterm Birth Prevention**

Week 3  
Vital records/Other data sources  
Chronic Disease

Week 4  
Genetics/Prenatal Diagnosis - Darius Adams  
Early Loss – Michael Bloom

Week 5  
Nutrition – Sonya Hauser  
**Discussion: Paper Topic**

Week 6  
Fetal Growth/Fetal Antecedents of Adult Health/Stress

Week 7  
Cognitive Effects  
**Discussion: Paper Background/Identify Gaps**

Week 8  
Congenital Malformations/Teratology/FAS  
**Discussion: Birthweight Standards**

Week 9  
NO CLASS

**II. INTERVENTIONS AND EXPOSURES**

Week 10  
Preeclampsia  
Smoking/Stress

Week 11  
Congenital Infection- Marilyn Kacica  
**Discussion: Paper Methods /Part 1 -Literature Review Due**

Week 12  
Oral Health – Jay Kumar  
Newborn Screening – Michele Caggana

Week 13  
Genetic Epidemiology- Roxanne Moslehir  
Assessing Gestational Age/Preterm Birth Prevention

Week 14  
Infertility/Male Reproduction – Germaine Buck Louis

Week 15  
PCB’s  
Occupational – Michele Herdt-Losavio
EPIDEMIOLOGY 610 – AIDS Epidemiology
Course Outline, Spring 2014

Key Information

Course Director: Akiko Hosler, Ph.D.
Associate Professor and Associate Chair
Department of Epidemiology and Biostatistics
East Campus GEC Rm. 147
ahosler@albany.edu

Time & Location: Monday, 1:00 -3:50 pm in Classroom C3

Office Hours: Tuesdays 11:00 A.M. – 1:00 P.M. or by appointment

Prerequisites: Epi 501 or equivalent

1. Course Organization

   Class is scheduled for Mondays from 1:00 PM to 3:50 PM in Classroom C3 on the UAlbany East Campus. Attendance and participation in the class is expected, and questions are encouraged.

   The topics of each lecture along with assigned student activities are listed in section 8 of this syllabus. The syllabus and other course materials, including lecture notes and assigned articles, will be available to download from the course website on the Blackboard Learning System. Students are expected to print out the lecture notes and other course materials; paper copies will not be provided.

2. Course Goals

   The purpose of this course is to examine and apply the basic principles and methods of epidemiology to the investigation, prevention, and control of the HIV/AIDS epidemic. Experts in HIV/AIDS medicine, laboratory science, epidemiology, surveillance, program management, and public health policy will provide a learning experience involving classroom lectures and student-initiated discussions. There will be a take-home midterm project and a final project. Students are also expected to conduct in-class presentations as part of the midterm project. Major issues explored will include etiology, lab testing and diagnosis, transmission, surveillance programs, data sources, co-infections, maternal and child transmission, socio-economic disparities, public health programs, implications for the health care system, ethics, and international HIV/AIDS epidemic and control measures.

3. Course Objectives and Competencies

   Competencies have been developed by the Association of Schools and Programs of Public Health for each of the core areas in public health. They are defined as a “core set of applied knowledge, skills, and other attributes … for the broad practice of public health”. By mastering the competencies, you will have the expertise needed to succeed in the workplace as a public health professional. In epidemiology, the core competencies are:
• Describe a public health problem in terms of magnitude, person, time and place
• Identify key sources of data for epidemiologic purposes.
• Apply the basic terminology and definitions of epidemiology.
• Calculate basic epidemiology measures.
• Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.
• Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data.
• Draw appropriate inferences from epidemiologic data.
• Evaluate the strengths and limitations of epidemiologic reports.
• Communicate epidemiologic information to lay and professional audiences.
• Identify the principles and limitations of public health intervention programs

This course is designed to address these competencies through a set of learning objectives. Specifically, by the end of this course you will:

• Understand the basic biology, testing, diagnosis, and treatment of HIV/AIDS
• Be able to describe the distribution of HIV/AIDS in various populations, places, and time.
• Describe regional, state, national and international HIV/AIDS surveillance systems, key sources of data, and their strengths and limitations
• Identify evidence-based strategies for HIV/AIDS prevention and control.
• Learn about historic development of HIV/AIDS public health programs
• Understand major biological, behavioral, and environmental risk factors of HIV/AIDS and how they interact with one another.
• Recognize various HIV/AIDS co-infections through epidemiologic research and surveillance, and explore means to prevent and control them.
• Recognize unique aspects of maternal to child transmission and its prevention and control strategies.
• Explore international HIV/AIDS epidemic and public health responses in various countries and territories.
• Discuss how socio-economic status, culture, physical environment, and social structure affect HIV/AIDS care and control.
• Translate HIV/AIDS research findings into practice and public health policy development.
• Learn about community-based approaches to improve HIV/AIDS outcomes and address disparities.
• Discuss ethical dilemmas associated with managing HIV/AIDS

4. Faculty

The instructors for this course are experts who are actively involved in HIV/AIDS- related clinical practice, epidemiologic research, public health program management, and policy development. Contact information will be provided during the lecture. Students can arrange meetings for extra help or have any questions.
5. Reading Material

Will be provided via Blackboard. Students must read the assigned reading materials BEFORE the scheduled lecture.

6. Grading

Your grade in this course will be calculated based on your performance as follows:

1. Each student will conduct a midterm project with in-class presentation. The quality of the student’s midterm project paper and presentation will account for 35% of the final grade.

2. Each student is expected to participate in class discussion. The quality of one’s contribution to class discussion will account for 15% of the final grade.

3. Each student will lead or co-lead a class discussion session on selected topics. The quality of the student’s performance as a discussion leader will contribute 10% to the final grade.

4. Take-home final project paper will account for 40% of the final grade.

Details of student assignments will be provided in class by the instructor.

The quality of your assigned activities will be evaluated by:

- Compliance with the format requirements
- Relevance and significance of the topic
- Organization of materials
- Clarity of writing/presentation
- Informational value (contribution to scientific knowledge)
- Originality
- Objectivity of the conclusions
- Quality and credibility of the referenced materials
- Proper crediting and citation
- Responses to other students’ questions and comments

The following criteria will be used to assign grades for this course:

Total score for the class:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>95-100</td>
<td>A</td>
</tr>
<tr>
<td>90-94</td>
<td>A-</td>
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<tr>
<td>85-89</td>
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<td>75-79</td>
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</tr>
<tr>
<td>70-74</td>
<td>C+</td>
</tr>
<tr>
<td>65-69</td>
<td>C</td>
</tr>
</tbody>
</table>

The instructors reserve the right to move the grading cut-points; however, the cut points will not be changed to a lower letter grade (e.g., a 90 will not result in a grade below A-).
7. Miscellaneous

**Cheating**
Academic dishonesty (please refer to the *Community Rights and Responsibilities* booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

**Courtesy**
As a courtesy to the instructor and your fellow students, the use of cell phones (including text messaging) is not permitted during class time. Please remember to silence your phone before class begins.
### Schedule of Lectures and Assignments (Updated 1/22/2014, subject to change upon notice)

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecturer</th>
<th>Topic</th>
<th>Student Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/27</td>
<td>Akiko Hosler</td>
<td>Course orientation, housekeeping information</td>
<td>n/a</td>
</tr>
<tr>
<td>2/3</td>
<td>Lou Smith (NYS DOH)</td>
<td>Public health HIV/AIDS data - history, structure HIV laboratory testing</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Monica Parker (Wadsworth Ctr.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/17</td>
<td>n/a</td>
<td>International HIV/AIDS epidemic and control 1 (pick a country)</td>
<td>Presentation</td>
</tr>
<tr>
<td>2/24</td>
<td>n/a</td>
<td>International HIV/AIDS epidemic and control 2 (pick a country)</td>
<td>Presentation</td>
</tr>
<tr>
<td>3/3</td>
<td>Alvaro Carrascal (Am.Cancer Soc.)</td>
<td>History of HIV/AIDS and the evolution of public health programs</td>
<td>Discussion</td>
</tr>
<tr>
<td>3/10</td>
<td>Amber Sinclair (NYS DOH)</td>
<td>National HIV Behavioral Surveillance</td>
<td>Discussion, Midterm paper due</td>
</tr>
<tr>
<td>3/17</td>
<td>No classes</td>
<td>(Spring break)</td>
<td></td>
</tr>
<tr>
<td>3/24</td>
<td>Lou Smith (NYS DOH)</td>
<td>Maternal to child transmission</td>
<td>Discussion</td>
</tr>
<tr>
<td>3/31</td>
<td>Rachel Malloy (NYS DOH)</td>
<td>Co-infections (part 1)</td>
<td>Discussion</td>
</tr>
<tr>
<td>4/7</td>
<td>Punkin Stephens (Epi &amp; Biostat)</td>
<td>Socio-economic &amp; cultural aspects, community-based programs</td>
<td>Discussion</td>
</tr>
<tr>
<td>4/14</td>
<td>No classes</td>
<td>(Religious holiday)</td>
<td></td>
</tr>
<tr>
<td>4/21</td>
<td>Erika Martin (Public Policy)</td>
<td>Public policy: HIV/AIDS resource allocation</td>
<td>Discussion</td>
</tr>
<tr>
<td>4/28</td>
<td>Rachel Malloy (NYS DOH)</td>
<td>Co-infections (part 2)</td>
<td>Discussion</td>
</tr>
<tr>
<td></td>
<td>Lusine Ghazaryan (NYS DOH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5/5</td>
<td>Alvaro Carrascal (NYS DOH)</td>
<td>HIV/AIDS and cancer</td>
<td>n/a</td>
</tr>
<tr>
<td></td>
<td>Punkin Stephens (Epi &amp; Biostat)</td>
<td>HIV/AIDS-addiction related issues</td>
<td></td>
</tr>
<tr>
<td>5/12</td>
<td>Akiko Hosler</td>
<td>Accepting final project</td>
<td>Final paper due</td>
</tr>
</tbody>
</table>
EPIDEMIOLOGY 610 – AIDS Epidemiology  
Course Outline, Spring 2014

Key Information

Course Director:  Akiko Hosler, Ph.D.  
Associate Professor and Associate Chair  
Department of Epidemiology and Biostatistics  
East Campus GEC Rm. 147  
ahosler@albany.edu

Time & Location:  Monday, 1:00 -3:50 pm in Classroom C3

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6. Grading

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<td>65-69</td>
<td>C</td>
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</tbody>
</table>

The instructors reserve the right to move the grading cut-points; however, the cut points will not be changed to a lower letter grade (e.g., a 90 will not result in a grade below A-).
7. **Academic Dishonesty**

The following is a list of acts considered to be academically dishonest and therefore unacceptable. Committing such acts is a breach of integrity and is subject to penalty. No such list can, of course, describe all possible types or degrees of academic dishonesty. Therefore this list should be viewed as a set of examples, rather than as an exhaustive list. Individual faculty members, Deans of Schools and Colleges as appropriate, and the Office of Conflict Resolution and Civic Responsibility will continue to judge each breach according to its particular context.

Plagiarism: Presenting as one's own work the work of another person (for example, the words, ideas, information, data, evidence, organizing principles, or style of presentation of someone else). Some examples of plagiarism include copying, paraphrasing, or summarizing without acknowledgment, submission of another student's work as one's own, the purchase/use of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. Students are responsible for understanding legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness.

Examples of plagiarism include: failure to acknowledge the source(s) of even a few phrases, sentences, or paragraphs; failure to acknowledge a quotation or paraphrase of paragraph-length sections of a paper; failure to acknowledge the source(s) of a major idea or the source(s) for an ordering principle; failure to acknowledge the source (quoted, paraphrased, or summarized) of major sections or passages in the paper or project; the unacknowledged use of several major ideas or extensive reliance on another person's data, evidence, or critical method; submitting as one's own work, work borrowed, stolen, or purchased from someone else.

Cheating on Examinations: Giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include collaboration of any sort during an examination (unless specifically approved by the instructor); collaboration before an examination (when such collaboration is specifically forbidden by the instructor); the use of notes, books, or other aids during an examination (unless permitted by the instructor); arranging for another person to take an examination in one's place; looking upon someone else's examination during the examination period; intentionally allowing another student to look upon one's exam; unauthorized discussion of exam questions during the examination period; and the passing of any examination information to students who have not yet taken the examination. There can be no conversation while an examination is in progress unless specifically authorized by the instructor.

Multiple Submission: Submitting substantial portions of the same work for credit more than once without receiving the prior explicit consent of the instructor to whom the material is being submitted the second or subsequent time.

 Forgery: Imitating another person's signature on academic or other official documents, including class material.

Sabotage: Willfully destroying, damaging, or stealing of another's work or working materials (including lab experiments, computer programs, term papers, digital files, or projects).

Unauthorized Collaboration: Collaborating on projects, papers, or other academic exercises when this is forbidden by the instructor(s). The default faculty assumption is that work submitted for credit is entirely one's own. At the same time, standards on appropriate and inappropriate collaboration as well as the need for collaboration vary across courses and disciplines. Therefore, students who want to
confer or collaborate with one another on work receiving academic credit should seek the instructor's permission to collaborate.

Falsification: Misrepresenting material or fabricating information in an academic exercise or assignment (for example, the false or misleading citation of sources, the falsification of experimental or computer data, etc.).

Bribery: Offering or giving any article of value or service to an instructor in an attempt to receive a grade or other benefits not legitimately earned or not available to other students in the class.

Theft, Damage, or Misuse of Library or IT Resources: Removing uncharged library materials from the library, defacing or damaging library materials, intentionally displacing or hoarding materials within the library for one's unauthorized private use, or other abuse of reserve-book privileges. Any violation of the University’s Responsible Use of Information Technology policy. This includes, but is not limited to, unauthorized use of the University's or another person's computer accounts, codes, passwords, or facilities; damaging computer equipment or interfering with the operation of the computing system of the University.

Academic dishonesty will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process. For more information (please refer to the Community Rights and Responsibilities booklet)

Cheating

Academic dishonesty (please refer to the Community Rights and Responsibilities booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

8. Courtesy

As a courtesy to the instructor and your fellow students, the use of cell phones (including text messaging) is not permitted during class time. Please remember to silence your phone before class begins.
### Schedule of Lectures and Assignments (Updated 3/24/2014, subject to change upon notice)

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<tr>
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<th>Lecturer</th>
<th>Topic</th>
<th>Student Activity</th>
<th>Reading</th>
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</thead>
<tbody>
<tr>
<td>1/27</td>
<td>Akiko Hosler</td>
<td>Course orientation, housekeeping information</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>2/3</td>
<td>Lou Smith (NYS DOH)</td>
<td>Public health HIV/AIDS data - history, structure, HIV laboratory testing</td>
<td>n/a</td>
<td>Miller et al. 2014 Karch et al. 2013 Buskin et al. 2014 Branson 2010</td>
</tr>
<tr>
<td>2/10</td>
<td>Abby Gallucci (Albany Med. Ctr.)</td>
<td>Clinical aspects of HIV/AIDS, safe sex education</td>
<td>Discussions (all)</td>
<td>Handout</td>
</tr>
<tr>
<td>2/17</td>
<td>n/a</td>
<td>International HIV/AIDS epidemic and control 1 (pick a country)</td>
<td>Presentation (Group 1)</td>
<td>n/a</td>
</tr>
<tr>
<td>2/24</td>
<td>n/a</td>
<td>International HIV/AIDS epidemic and control 2 (pick a country)</td>
<td>Presentation (Group 2)</td>
<td>n/a</td>
</tr>
<tr>
<td>3/17</td>
<td>No classes</td>
<td>(Spring break)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/7</td>
<td>Punkin Stephens (Epi &amp; Biostat)</td>
<td>Socio-economic &amp; cultural aspects, community-based programs</td>
<td>Discussion (Team 5)</td>
<td>TBA</td>
</tr>
<tr>
<td>4/14</td>
<td>No classes</td>
<td>(Religious holiday)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/28</td>
<td>Rachel Malloy (NYS DOH) Lusine Ghazaryan (NYS DOH)</td>
<td>Co-infections (part 2)</td>
<td>Discussion (Team 7)</td>
<td>TBA</td>
</tr>
<tr>
<td>5/5</td>
<td>Alvaro Carrascal (NYS DOH) Punkin Stephens (Epi &amp; Biostat)</td>
<td>HIV/AIDS and cancer HIV/AIDS-addiction related issues</td>
<td>n/a</td>
<td>TBA</td>
</tr>
<tr>
<td>5/12</td>
<td>Akiko Hosler</td>
<td>Accepting final project</td>
<td>Final paper due</td>
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</tbody>
</table>
EPIDEMIOLOGY 612 – Quantitative Methods in Epidemiology
Course Outline, Fall 2012 (Class Number 3511)

Key Information

Instructor: Maggie Gates, ScD
Department of Epidemiology and Biostatistics, Room 133
Email: mgates@albany.edu
Phone: (518) 402-0397

TA: Tom O’Grady, MPH
Email: togrady@albany.edu

Time: Tuesdays and Thursdays, 10:30 am-12:30pm

Location: Classroom C2
Lab sessions in Computer Teaching Lab L2 (next to GSO office)

Prerequisites: EPI501 & 502 or equivalent, EPI552 & 553 or equivalent; EPI601 recommended

Required Text: Statistics for Epidemiology
Nicholas P. Jewell
Chapman & Hall/CRC, 2003

See sections 5 and 10 below for recommended reference texts and additional required readings.

1. Course Organization

Class is scheduled for Tuesdays and Thursdays from 10:30 am-12:30 pm in Classroom C2 at the School of Public Health (located at One University Place in Rensselaer). Six lab sessions will be held in the Computer Teaching Lab L2 throughout the semester (see schedule below) during the regular class meeting time. Attendance in the class and lab sessions is expected, and class participation and questions are encouraged.

The topics of each lecture along with readings and assignment due dates are listed in section 10 of the syllabus. The syllabus and other course materials, including lecture notes, lab assignments, and assigned articles will be available to download from the course website on the Blackboard Learning System. Students are expected to print out the lecture notes and bring them to class.

2. Course Goals and Objectives/Competencies

Learning Objectives
The purpose of this course is to equip students to conduct epidemiologic analyses and to interpret and present the results of their analyses. Students will learn about quantitative methods in epidemiology, how to apply common statistical methods including logistic regression and Cox proportional hazards regression, and how to interpret the results of statistical analyses. Key objectives of the course are:

1. To develop an understanding of basic data analytic procedures used in epidemiologic research;
2. To develop proficiency in data analysis using a statistical software package (SAS);
3. To develop skills in epidemiologic writing;
4. To demonstrate skills in the synthesis of epidemiologic knowledge by conducting a data analysis and preparing a report of the analysis and results as part of the final project.
Competencies
This course teaches topics and skills that relate to competencies considered critical by the Association of
Schools of Public Health (ASPH) for all MPH graduates (see pages 17-30 of the following document:
http://www.albany.edu/MPH_Internship_Handbook_2012.pdf), including

Biostatistics
• Apply descriptive techniques commonly used to summarize public health data
• Apply common statistical methods for inference
• Interpret results of statistical analyses found in public health studies
• Use statistical software to analyze health-related data

Epidemiology
• Identify key sources of data for epidemiologic purposes
• Calculate basic epidemiology measures
• Communicate epidemiologic information to lay and professional audiences
• Draw appropriate inferences from epidemiologic data
• Evaluate the strengths and limitations of epidemiologic reports

Communication and Informatics
• Use information technology to access, evaluate, and interpret public health data

3. Faculty
The instructor for this course is Dr. Maggie Gates. Her office is located in room 133 of the Department of
Epidemiology and Biostatistics at the School of Public Health. Dr. Gates is available to discuss material
covered in the lectures and labs during office hours (see section 8 below) or by appointment. She can be
reached by email at mgates@albany.edu or by phone at (518) 402-0397.

4. Teaching Assistant
The teaching assistant for this course is Tom O’Grady, a doctoral student in Epidemiology at the School of
Public Health. He has an office in the School of Public Health and will be available to discuss material
covered in the lectures and labs. His office hours are listed in section 8 below.

5. Reading Materials
The required textbook for the course is Statistics for Epidemiology by Nicholas P. Jewell (Chapman &
Hall/CRC, 2003). Additional required readings will be assigned (see section 10) and posted on the course
website.

Additional reference textbooks that may be helpful include:

   Applied Logistic Regression, 2nd Edition
   David W. Hosmer and Stanley Lemeshow
   Wiley-Interscience Publication, 2000

   Multivariate Methods in Epidemiology
   Theodore R. Holford
   Oxford University Press, 2002
6. Grading

Your grade in this course will be calculated based on your performance on the lab assignments, midterm exam, final exam, and final project. The midterm and final exams will be closed-book and held in class. If you have a conflict with the date of the midterm or final exam, notify Dr. Gates no later than Thursday, September 6th. Active class participation can add up to 4 additional points to your final grade.

Your grade will be calculated based on your performance as follows:

Lab assignments: 25% (5% per assignment)
Midterm exam: 25%
Final exam: 25%
Final project: 25% (5% for analysis plan, 20% for data analysis and final report)

The following criteria will be used to assign grades for this course:

<table>
<thead>
<tr>
<th>Total score for the class:</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>95-100</td>
<td>A</td>
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<tr>
<td>90-94</td>
<td>A-</td>
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<tr>
<td>87-89</td>
<td>B+</td>
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<tr>
<td>84-86</td>
<td>B</td>
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<td>80-83</td>
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<td>77-79</td>
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<td>74-76</td>
<td>C</td>
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<tr>
<td>70-73</td>
<td>C-</td>
</tr>
<tr>
<td>69 or lower</td>
<td>D+ or lower</td>
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</tbody>
</table>

The instructor reserves the right to move the grading cut-points; however, the cut points will not be changed to a lower letter grade (e.g., a 90 will not result in a grade below A-).

Lab assignments

Six lab sessions will be held in the Computer Teaching Lab L2 throughout the semester. Lab assignments will be handed out during the lab session and will generally be due one week after the lab session. You are expected to work on the lab assignment during the lab class time. You may discuss the assignments with other students in the class, but you are expected to complete and turn in your own lab assignments. Lab assignments are due at the beginning of class on the assigned due date and must be submitted in printed (hard-copy) format. Late assignments carry a penalty of 20% off per day late. The final lab session on November 29th will be an opportunity for students to work on the final project and to ask questions related to the final project; there will not be a formal lab assignment.
Examinations
There is one midterm exam and one final exam for this course. Both exams will be closed book and will be held in class (i.e., not take-home). Any formulas needed for the midterm and final exams will be provided by the instructor. The final exam is cumulative but will focus on material from the second half of the course.

Final project
For the final project, students will conduct a data analysis using methods covered in the course, including: 1) identifying a data source and describing the data, study design, and any issues with the sampling or other study methods; 2) preparing the data for analysis; 3) examining and coding the variables; 4) conducting simple and multivariable-adjusted regression analyses appropriate to the data and study question; and 5) interpreting the results and preparing a report of the background, methods, results, limitations, and conclusions. Students are encouraged to use their own data (if available) or publically available data for the project. A data set will be provided for students without their own data set. All students must fill out a Data Release Form for the project indicating the source of their data (public or non-public) and documenting permission for use of non-public data (if applicable).

An analysis plan outlining the proposed analysis is due in class on October 25th. The completed Data Release Form should also be submitted on October 25th. The final project report is due in class on December 6th and should include a brief description of the background and study question (1 paragraph), methods (approximately 2 double-spaced pages), results (approximately 2 double-spaced pages plus at least 2 tables), limitations (<1 page), and conclusions (1 paragraph). Additional details of the final project, including the expectations for the analysis plan, data analysis, and final report, will be provided on the course website no later than September 25th.

You are expected to complete and turn in your own project. You may discuss the project with other students in the class, but the work should be your own. You are encouraged to discuss the project with the teaching staff during office hours or by appointment.

7. Miscellaneous

Statistical software
SAS will be the primary statistical software package used in this class. Students may use different statistical software, but assistance and technical support is not guaranteed.

Cheating
Academic dishonesty (please refer to the Community Rights and Responsibilities booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

Courtesy
As a courtesy to the instructor and your fellow students, the use of cell phones (including text messaging) is not permitted during class time. Please remember to silence your phone before class begins.

8. Office Hours

Maggie Gates: Tuesdays from 1-3 pm, or by appointment (room 133)
Tom O’Grady: Thursdays from 12:30-2 pm (location TBA)
9. **Lectures and Assignments**

The schedule of lecture topics, readings, and assignment due dates is shown below. Changes to the schedule may occur if needed. Students will be notified of any changes to the schedule in class and on the course website.
<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture</th>
<th>Readings Due</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/28</td>
<td>T Lecture 1 – Introduction, getting to know your data</td>
<td>Jewell chapter 3</td>
<td></td>
</tr>
<tr>
<td>8/30</td>
<td>Th Lecture 2 – Review of key biostats concepts: binomial distribution, inferences about proportions</td>
<td>Jewell chapter 2.1, 4.1-4.4</td>
<td></td>
</tr>
<tr>
<td>9/4</td>
<td>T Lecture 3 – Review of key epi concepts: study designs, measures of disease occurrence/association</td>
<td>Jewell chapter 3</td>
<td></td>
</tr>
<tr>
<td>9/6</td>
<td>Th Lab 1</td>
<td></td>
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</tr>
<tr>
<td>9/11</td>
<td>T Lecture 4 – Review of confounding and effect modification, introduction to causal diagrams/DAGs</td>
<td>Jewell chapter 8</td>
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</tr>
<tr>
<td>9/18</td>
<td>T No class</td>
<td></td>
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</tr>
<tr>
<td>9/20</td>
<td>Th Lab 2</td>
<td></td>
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<tr>
<td>9/25</td>
<td>T Lecture 6 – 2 x 2 and R x C tables</td>
<td>Jewell chapter 6, 7.1-7.2</td>
<td></td>
</tr>
<tr>
<td>9/27</td>
<td>Th Lecture 7 – Stratified analysis</td>
<td>Jewell chapter 9</td>
<td>Lab 2 assignment due</td>
</tr>
<tr>
<td>10/2</td>
<td>T Lecture 8 – Simple logistic regression</td>
<td>Jewell chapter 12.4-12.5</td>
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<tr>
<td>10/4</td>
<td>Th Lab 3</td>
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<tr>
<td>10/9</td>
<td>T Lecture 9 – Multivariable logistic regression</td>
<td>Jewell chapter 12.6</td>
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<tr>
<td>10/11</td>
<td>Th Lecture 10 – Interpreting logistic regression results</td>
<td>Jewell chapter 12.4.1; Gates et al. Int J Cancer 2009</td>
<td>Lab 3 assignment due</td>
</tr>
<tr>
<td>10/16</td>
<td>T Lecture 11 – Model building/assessing confounding in logistic regression models</td>
<td>Jewell chapter 14.1, 15.2; Greenland Am J Public Health 1989</td>
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<tr>
<td>10/18</td>
<td>Th Midterm exam</td>
<td></td>
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<tr>
<td>10/23</td>
<td>T Lecture 12 – Examining effect modification in logistic regression models</td>
<td>Jewell chapter 10, 14.2</td>
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<tr>
<td>10/25</td>
<td>Th Lecture 13 – Goodness of fit, test for trend, collinearity</td>
<td>Jewell chapter 11.3, 14.5, 15.3</td>
<td>Final project analysis plan due</td>
</tr>
<tr>
<td>10/30</td>
<td>T Lecture 14 – Handling missing data</td>
<td>Jewell chapter 14.7.2; Greenland &amp; Finkle Am J Epidemiol 1995</td>
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<tr>
<td>11/1</td>
<td>Th Lab 4</td>
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<tr>
<td>11/8</td>
<td>Th Lecture 16 – Analysis of incidence rates</td>
<td>Jewell chapter 2.2, 4.5</td>
<td>Lab 4 assignment due</td>
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<tr>
<td>11/15</td>
<td>Th Lab 5</td>
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<td>11/22</td>
<td>Th No class</td>
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<tr>
<td>11/27</td>
<td>T Lecture 19 – Introduction to survival analysis</td>
<td>Rao &amp; Schoenfeld Circulation 2007</td>
<td>Lab 5 assignment due</td>
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<tr>
<td>11/29</td>
<td>Th Lab 6 (optional session to work on final project)</td>
<td></td>
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<tr>
<td>12/4</td>
<td>T Lecture 20 – Cox proportional hazards regression</td>
<td>Jewell chapter 17.3-17.6</td>
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<tr>
<td>12/6</td>
<td>Th Lecture 21 – Cox proportional hazards regression</td>
<td>Krishnan et al. Am J Epidemiol 2009</td>
<td>Final project due</td>
</tr>
<tr>
<td>12/11</td>
<td>T Lecture 22 – Review for final exam</td>
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<tr>
<td>12/13</td>
<td>Th Final exam</td>
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</table>
EPIDEMIOLOGY 612 – Quantitative Methods in Epidemiology  
Course Syllabus, Fall 2013

Key Information

Instructor: Greg DiRienzo  
Department of Epidemiology and Biostatistics  
Email: adirienzo@albany.edu

TA: Tom O’Grady  
Doctoral candidate in Epidemiology  
Email: togrady@albany.edu

Time: Tuesdays and Thursdays, 9:00 am-11:00am

Location: Classroom C2  
Lab sessions in Computer Teaching Lab L2 (next to GSO office)

Prerequisites: EPI501 & 502 or equivalent, EPI552 & 553 or equivalent; EPI601 recommended

Required Text: Statistics for Epidemiology  
Nicholas P. Jewell  
Chapman & Hall/CRC, 2003

See sections 3 and 7 below for recommended reference texts and additional required readings.

1. Course Organization

Five lab sessions will be held in the Computer Teaching Lab L2 throughout the semester (see schedule below) during the regular class meeting time. Attendance in the class and lab sessions is expected, with class participation strongly encouraged.

The topics of each lecture along with readings and assignment due dates are listed in section 7 below. The syllabus and other course materials, including lecture notes, lab assignments, homework assignments and assigned articles will be available to download from the course website on the Blackboard Learning System. Obtaining class material will be the responsibility of the student.

2. Course Description

Students will learn the epidemiologic application of concepts introduced in STA 552 and 553. Topics include simple and stratified analyses of cross-sectional, case-control, cumulative follow-up and density follow-up studies; assessment of confounding and interaction; matching in epidemiologic studies; theoretical considerations, analysis strategies and applications in linear and logistic regression.

3. Course Goals and Objectives/Competencies

The purpose of this course is to train students in the conduct, interpretation and presentation of basic epidemiologic analyses. Some of the fundamental quantitative methods in epidemiology that are covered include the analysis of contingency tables, logistic regression, Poisson regression and Cox proportional hazards regression. The key objectives of the course are:
1. To develop an understanding of basic data analytic procedures used in epidemiologic research;
2. To develop proficiency in data analysis using a statistical software package (SAS);
3. To develop skills in epidemiologic writing;
4. To demonstrate skills in the synthesis of epidemiologic knowledge by conducting data analysis and composing solutions to lab assignments.
4. **Reading Materials**

The required textbook for the course is *Statistics for Epidemiology* by Nicholas P. Jewell (Chapman & Hall/CRC, 2003). Additional required readings will be assigned (see section 7) and posted on the course website.

Additional reference textbooks that may be helpful include:

- *Applied Logistic Regression, 2nd Edition*  
  David W. Hosmer and Stanley Lemeshow  
  Wiley-Interscience Publication, 2000

- *Multivariate Methods in Epidemiology*  
  Theodore R. Holford  
  Oxford University Press, 2002

- *Epidemiology: Beyond the Basics*  
  Moyses Szklo and F. Javier Nieto  

- *Fundamentals of Biostatistics*  
  Bernard Rosner  

**Website**

Lecture notes, assignments, and other course materials will be posted on the Blackboard Learning System course website. Students registered for the class can access the course material through the MyUAlbany link to Blackboard Learning System.

5. **Grading**

Your grade in this course (A-E) will be calculated based on your performance on the lab assignments, homework assignments, midterm exam and final exam. The midterm and final exams will be closed-book and held in class.

Your grade will be calculated based on your performance as follows:

- Lab and homework assignments: 30%
- Midterm exam: 30%
- Final exam: 40%

**Lab Assignments**

Five lab sessions will be held in the Computer Teaching Lab L2 throughout the semester. Lab assignments will be handed out during the lab session and will be due one week after the lab session. You are expected to work on the lab assignment during the lab class time. You may discuss the assignments with other students in the class, but the lab assignments that you turn in are expected to be your own work. Lab assignments are due at the beginning of class on the assigned due date and must be submitted in printed (hard-copy) format. Lab assignments that are not submitted on time will be considered late and will not be accepted.
Homework Assignments
Written homework problems will be assigned from the required textbook; assignments turned in after the due date will not be accepted.

Examinations
There is one midterm exam and one final exam for this course. Both exams will be closed book and will be held in class. Any formulas needed for the midterm and final exams will be provided by the instructor. The final exam is cumulative but will focus on material from the second half of the course.

6. Miscellaneous

Statistical software
SAS will be the primary statistical software package used in this class. Students may use different statistical software, but assistance and technical support is not guaranteed.

Cheating
Academic dishonesty (please refer to the Community Rights and Responsibilities booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

“Every student has the responsibility to become familiar with the standards of academic integrity at the University. Faculty members must specify in their syllabi information about academic integrity, and may refer students to this policy for more information. Nonetheless, student claims of ignorance, unintentional error, or personal or academic pressures cannot be excuses for violation of academic integrity. Students are responsible for familiarizing themselves with the standards and behaving accordingly, and UAlbany faculty are responsible for teaching, modeling and upholding them. Anything less undermines the worth and value of our intellectual work, and the reputation and credibility of the University at Albany degree.” (University’s Standards of Academic Integrity Policy, Fall 2013)

Courtesy
As a courtesy to the instructor and your fellow students, the use of cell phones (including text messaging) is not permitted during class time. Please remember to silence your phone before class begins.

7. Office Hours

Tom O'Grady: Tuesday and Thursday 11am-12pm, TA office
Greg DiRienzo: By appointment
## 8. Schedule of Lectures and Assignments

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture</th>
<th>Readings Due</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/27</td>
<td>Lecture 1 – Introduction, getting to know your data</td>
<td></td>
<td></td>
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<tr>
<td>8/29</td>
<td>Lecture 2 – Review of key biostats concepts: binomial</td>
<td>Jewell chapter 3</td>
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<td></td>
<td>distribution, inferences about proportions</td>
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<td>9/3</td>
<td>Lecture 3 – Review of key epi concepts: study designs, measures of</td>
<td>Jewell chapter 2.1, 4.1-4.4</td>
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<td>disease occurrence/association</td>
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<tr>
<td>9/5</td>
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<tr>
<td>9/10</td>
<td>Lab 1</td>
<td></td>
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<tr>
<td>9/12</td>
<td>Lecture 4 – Review of confounding and effect modification, introduction</td>
<td>Jewell chapter 8</td>
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<td>to causal diagrams/DAGs</td>
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<tr>
<td>9/17</td>
<td>Lecture 5 – 2 x 2 and R x C tables</td>
<td>Jewell chapter 6, 7.1-7.2</td>
<td>Lab 1 assignment due</td>
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<td>9/19</td>
<td>Lab 2</td>
<td></td>
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<tr>
<td>9/24</td>
<td>Lecture 6 – Stratified analysis</td>
<td>Jewell chapter 9</td>
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<tr>
<td>9/26</td>
<td>Lecture 7 – Simple logistic regression</td>
<td>Jewell chapter 12.4-12.5</td>
<td>Lab 2 assignment due</td>
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<tr>
<td>10/1</td>
<td>Lecture 8 – Multivariable logistic regression</td>
<td>Jewell chapter 12.6</td>
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<td>10/3</td>
<td>Lab 3</td>
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<tr>
<td>10/8</td>
<td>Lecture 9 – Interpreting logistic regression results</td>
<td>Jewell chapter 12.4.1; Gates et al. Int J Cancer</td>
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<td>2009</td>
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<tr>
<td>10/10</td>
<td>Lecture 10 – Model building/assessing confounding in logistic</td>
<td>Jewell chapter 14.1, 15.2; Greenland Am J Public Health 1989</td>
<td>Lab 3 assignment due</td>
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<tr>
<td></td>
<td>regression models</td>
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<tr>
<td>10/15</td>
<td>Lecture 11 – Examining effect modification in logistic regression</td>
<td>Jewell chapter 10, 14.2</td>
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<td>models</td>
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<tr>
<td>10/17</td>
<td>Lecture 12 – Goodness of fit, test for trend, collinearity</td>
<td>Jewell chapter 11.3, 14.5, 15.3</td>
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<td>10/22</td>
<td>MIDTERM TEST</td>
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<tr>
<td>10/24</td>
<td>Lecture 13 – Handling missing data</td>
<td>Jewell chapter 14.7.2; Greenland &amp; Finkle Am J Epidemiol 1995</td>
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<tr>
<td>10/29</td>
<td>Lab 4</td>
<td></td>
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<tr>
<td>11/5</td>
<td>Lecture 15 – Analysis of incidence rates</td>
<td>Jewell chapter 2.2, 4.5</td>
<td>Lab 4 assignment due</td>
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<td>11/12</td>
<td>Lab 5</td>
<td></td>
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<tr>
<td>11/19</td>
<td>Lecture 18 – Introduction to survival analysis</td>
<td>Rao &amp; Schoenfeld Circulation 2007</td>
<td>Lab 5 assignment due</td>
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<tr>
<td>11/21</td>
<td>Lecture 19 – Introduction to survival analysis</td>
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<tr>
<td>11/26</td>
<td>Lecture 20 – Cox proportional hazards regression</td>
<td>Jewell chapter 17.3-17.6</td>
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<td>11/28</td>
<td>NO CLASS</td>
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<tr>
<td>12/5</td>
<td>Lecture 22 – Review for final exam</td>
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<tr>
<td>12/10</td>
<td>FINAL TEST</td>
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EPI 616 Social Class, Race and Culture in Epidemiology
Spring 2013
Wednesday 1:00-3:50

Course Description
This course will introduce students to theories, concepts, and methods for investigating the social determinants of health. Using epidemiology and biostatistics method and theories, the course will focus on examining social factors implicated in the development and distribution of disease and the methods used to investigate these associations. Specifically, students will critically evaluate measures used in Epidemiology, discuss major debates in the field, identify strengths and weaknesses of previously published studies, and examine possible solutions targeting social factors.

Course Prerequisite
Students must have completed an Introduction to Epidemiology (course 500 or 501) or Introduction to Public Health and/or Introduction to Biostatistics (course 503 and/or 551 or 552), or obtain written approval from the Instructor.

Course Objectives/Competencies
After completion of this course, students should be able to:

- Define social determinants and how are this determinants are measured
- Discuss measures, methods, and study designs used in epidemiology in particular Social Epidemiology
- Describe conceptual and methodological debates around social determinants
- Discuss the role of social factors in shaping the public’s health

Competencies:
- Explain importance of epidemiology for informing discussion of health issues
- Describe public health problem in terms of person, place, and time
- Apply basic terminology and definitions of epidemiology
- Identify key sources of data
- Evaluate strengths and limitations of epidemiologic reports
- Draw appropriate inferences from epidemiologic data
- Comprehend basic ethical and legal issues pertaining to epidemiologic data
- Identify principals and limitations of public health screening programs
Instructor

Elizabeth Grubert
Assistant Professor
UA-SPH, Room 121
518-408-2362
Office Hours Thursday 1-2 or by Appointment
egrubert@albany.edu

Grading

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>Class participation and workshops</td>
</tr>
<tr>
<td>20%</td>
<td>1-3 page critiques (total of 4)</td>
</tr>
<tr>
<td>30%</td>
<td>Seminar paper (10-12 pages double-spaced)</td>
</tr>
<tr>
<td>20%</td>
<td>Class presentation</td>
</tr>
<tr>
<td>10%</td>
<td>Feedback memo</td>
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</table>

Course Format and Requirements

The course will be conducted in seminar format with an open discussion of each session’s readings. Students are expected to actively participate in class discussion of all assigned readings and lecture topics.

1. CLASS PARTICIPATION AND WORKSHOPS: The quality of our seminar will depend on the quality of participants’ critical thinking to engage in thoughtful and thought provoking discussions. It is absolutely essential that students read and reflect on all assigned material in advance of the seminar. 20% of the class final grade will be based on student leading a workshop section and class participation.

2. CRITIQUES: Students will be required to write a total of 4 short critiques for the semester. Students are free to select one assigned paper from the list of supplemental readings for this assignment. The critiques should be no more than 1-3 pages long and succinctly describe student understanding of the study goal/ hypotheses, design and methods, and study conclusions. Critiques will be discussed in class on their due date.

3. SEMINAR PAPER: For this paper, students will be asked to choose a health disparity of their interests (e.g. higher rates of asthma in African American children, higher obesity rates in Mexican American women) in a community of their choice. The disparities chosen for the seminar paper will become mini-case studies. Students will be asked to explain why this disparity is important to address from a public health perspective, to review the existing literature about this disparity and to develop a conceptual framework that explores the reasons both known and unknown for this disparity and what needs to be done. This seminar paper should be a productive learning experience. Hence, students will be asked to hand in a good draft four weeks before the final paper is due. This will give students the opportunity to incorporate a round of feedback from the instructor and their peers into their presentation and final paper.

4. CLASS PRESENTATION: In addition, students will give a brief presentation based on their paper. The class will give structured feedback on student presentation, which will also help to improve the quality
of the final paper. As a class, we will apply to each disparity the broader lessons learned about the social determinants of health throughout the semester.

5. FEEDBACK MEMO: Students will be asked to document how they have addressed instructor concerns and the concerns of their peers when they hand in their final seminar paper. This will require handing in a short memo that briefly outlines, point for point, how the student addressed our substantive concerns. This is an important exercise because revisions to journal articles and grants are typically accompanied by such a memo.

Academic Integrity
Academic dishonesty (please refer to the Community Rights and Responsibilities booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

Required Text
The following book will be required for class:

The following books are recommended for students interested in further readings on the topic:

List of topics

LECTURE 1: 1/23/13
Topic: A. Review of course syllabus
    B. Introduction to course
    C. Introduction to social determinants

LECTURE 2: 1/30/13
Topic: History and theories in social epidemiology
    - Berkman and Kawachi, eds. Social Epidemiology. Chapter 1

LECTURE 3: 2/6/13
Topic: Current debates in social epidemiology
- Kaplan GA. What's wrong with social epidemiology, and how can we make it better? Epidemiol Rev. 2004;26:124-35.
- **Workshop #1**

**LECTURE 4:** 2/13/13

**Topic:** People behind the numbers--**Guest speaker: L. Gensburg**
- **Critique #1 due**

**LECTURE 5:** 2/20/13

**Topic:** Income, poverty, education, or occupation--**Guest speaker: D. Williams**
- Berkman and Kawachi, eds. Social Epidemiology. Chapter 5
- **Workshop #2**

**LECTURE 6:** 2/27/13

**Topic:** Relative position vs. absolute deprivation

  Viewing of the documentary ‘Unnatural causes... Is inequality making us sick?’
  Segment 7: “Not just a paycheck”
- Berkman and Kawachi, eds. Social Epidemiology. Chapter 2
- Critique #2 due

LECTURE 7: 3/6/13
Topic: Racism and Discrimination- How is it measured?
Viewing of the documentary ‘Unnatural causes... Is inequality making us sick?’
Segment 2: “When the Bough Breaks”
- Berkman and Kawachi, eds. Social Epidemiology. Chapter 3

LECTURE 8: 3/13/13
Topic: Social Networks and Migration
- Berkman and Kawachi, eds. Social Epidemiology. Chapter 7
- Workshop #3

Spring break 3/18/13----3/22/13

LECTURE 9: 3/27/13
Topic: Neighborhoods/ Place Effects
Viewing of the documentary ‘Unnatural causes... Is inequality making us sick?’
Segment 5: “Place Matters”
- Diez Roux AV. The study of group-level factors in epidemiology: rethinking variables, study designs, and analytic approaches. Epidemiol Rev. 2004; 26: 104-11
- Berkman and Kawachi, eds. Social Epidemiology. Chapter 8
- Workshop #4

LECTURE 10:  4/3/13

Topic: Childhood and Life Course Models Key Social components —Guest speaker: Dr. E. Bell
- Critique #3 due

LECTURE 11:  4/10/13  SEMINAR PAPER DRAFT DUE

Topic: Examples of Health Interventions Targeting Social Factors -- Guest speaker: Dr. A. Carrascal
- Berkman and Kawachi, eds. Social Epidemiology. Chapters 11- 12
- Workshop #5

LECTURE 12:  4/17/13

Topic: Measurement issues and causal inference surrounding social determinants
- Braveman P. When do we know enough to recommend action? The need to be bold but not reckless. J Epi and Comm Hlth.
- Berkman and Kawachi, eds. Social Epidemiology. Chapters 14 and 16

LECTURE 13: 4/24/13
Topic: Presentation of seminar paper

LECTURE 14: 5/1/13
Topic: Course wrap-up/ Review: Where do you stand?
- Critique #4 due

Final paper due 5/13/13 before 12:00 pm

Supplemental Readings for Critiques

4. Nalini Ranjit, PhD; Ana V. Diez-Roux, MD, PhD; Steven Shea, MD, MS; Mary Cushman, MD, MSc; Hanyu Ni, PhD, MPH; Teresa Seeman, PhDRanjit. Socioeconomic Position, Race/Ethnicity, and Inflammation in the Multi-Ethnic Study of Atherosclerosis. (Circulation. 2007; 116: 2383-2390.)
13. Chandola T, Brunner E, Marmot M. Chronic stress at work and the metabolic syndrome: prospective study. BMJ.
EPI 619: EPIDEMIOLOGY OF DIABETES – Spring 2013

Instructor:   Dr. Akiko S. Hosler
             GEC Rm. 147, East Campus
             One University Place, Rensselaer, NY 12144-3456
             E-mail: ahosler@albany.edu   Phone: (518) 402-1561

Time:        Wednesday 9:00 AM – 11:50 AM
Place:       Rm. C2, School of Public Health (East Campus), Rensselaer
Office Hours: Tuesdays 10:00 – 12:00 or by appointment

COURSE DESCRIPTIONS

This course is designed to provide up-to-date scientific knowledge of diabetes epidemiology to students with basic preparation in epidemiology. The course teaches important concepts and tools for investigating diabetes prevalence, mortality, risk factors and complications in various populations and geographic units, and enables students to translate scientific findings into public health action and practice. The course emphasizes students to view diabetes from various levels: from biological and clinical aspects to community, population, and health care systems levels.

This course covers a wide range of topics related to diabetes epidemiology. Some topics will be taught by expert guest lecturers. The textbook for this course is “Handbook of Diabetes 4th Edition” (HOD) by Rudy Bilous and Richard Donnelly (Eds.) (Wiley-Blackwell, September, 2010). Additional reading materials, mostly from scientific journals, will also be assigned. Students are required to finish assigned readings before each lecture.

OBJECTIVES & COMPETENCIES

Competencies have been developed by the Association of Schools of Public Health for each of the core areas in public health. They are defined as a “Core Set of Applied Knowledge, Skills, and other Attributes … for the Broad Practice of Public Health”. By mastering the competencies, you will have the expertise needed to succeed in the workplace as a public health professional. In epidemiology, the core competencies are:

- Identify key sources of data for epidemiologic purposes.
- Identify the principles and limitations of public health screening programs.
- Describe a public health problem in terms of magnitude, person, time and place.
- Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.
• Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data.
• Apply the basic terminology and definitions of epidemiology.
• Calculate basic epidemiology measures.
• Communicate epidemiologic information to lay and professional audiences.
• Draw appropriate inferences from epidemiologic data.
• Evaluate the strengths and limitations of epidemiologic reports.

This course is designed to address these competencies through a set of learning objectives. Specifically, by the end of this course you will:

• Understand the basic biology, diagnosis, treatment, and self-care of diabetes.
• Be able to describe the distribution of diabetes in various populations, places, and time.
• Understand consequences of poorly controlled diabetes, including complications, disabilities, and mortality.
• Understand major biological and behavioral risk factors of diabetes and how they interact with one another and with contextual factors.
• Learn about historic landmark studies of diabetes as well as some of the most up-to-date diabetes research.
• Identify strengths and weaknesses of epidemiological studies in the development of evidence for diabetes prevention, treatment, and care.
• Discuss how socio-economic status, culture, migration, physical environment, and social structure affect diabetes care and control.
• Be able to describe how diabetes can be prevented.
• Be familiar with how diabetes screening is planned, conducted and evaluated.
• Translate diabetes research findings into practice and policy development.
• Learn about evidence-based approaches to improve diabetes outcomes and address diabetes disparities in the community.

**GRADING**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework assignment</td>
<td>10%</td>
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<tr>
<td>In-class presentations (3 times)</td>
<td>60%</td>
</tr>
<tr>
<td>Project paper</td>
<td>30%</td>
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</table>

Students are required to actively participate in class discussions, and give three in-class presentations on selected topics. There will also be a homework assignment, and a final project paper. Additional assignments may be given.

The project paper is due on or before 11:59 PM, May 13th. Students can choose either an analytic research paper (about 2000 words, 3-4 tables) or a comprehensive literature review paper (about 3,000 words, 30+ references). Detailed information about in-class presentation and project paper will be given in class.
ACADEMIC DISHONESTY:

The following is a list of acts considered to be academically dishonest and therefore unacceptable. Committing such acts is a breach of integrity and is subject to penalty. No such list can, of course, describe all possible types or degrees of academic dishonesty. Therefore this list should be viewed as a set of examples, rather than as an exhaustive list. Individual faculty members, Deans of Schools and Colleges as appropriate, and the Office of Conflict Resolution and Civic Responsibility will continue to judge each breach according to its particular context.

Plagiarism: Presenting as one's own work the work of another person (for example, the words, ideas, information, data, evidence, organizing principles, or style of presentation of someone else). Some examples of plagiarism include copying, paraphrasing, or summarizing without acknowledgment, submission of another student's work as one's own, the purchase/use of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. Students are responsible for understanding legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness.

Examples of plagiarism include: failure to acknowledge the source(s) of even a few phrases, sentences, or paragraphs; failure to acknowledge a quotation or paraphrase of paragraph-length sections of a paper; failure to acknowledge the source(s) of a major idea or the source(s) for an ordering principle; failure to acknowledge the source (quoted, paraphrased, or summarized) of major sections or passages in the paper or project; the unacknowledged use of several major ideas or extensive reliance on another person's data, evidence, or critical method; submitting as one's own work, work borrowed, stolen, or purchased from someone else.

Cheating on Examinations: Giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include collaboration of any sort during an examination (unless specifically approved by the instructor); collaboration before an examination (when such collaboration is specifically forbidden by the instructor); the use of notes, books, or other aids during an examination (unless permitted by the instructor); arranging for another person to take an examination in one's place; looking upon someone else's examination during the examination period; intentionally allowing another student to look upon one's exam; unauthorized discussion of exam questions during the examination period; and the passing of any examination information to students who have not yet taken the examination. There can be no conversation while an examination is in progress unless specifically authorized by the instructor.

Multiple Submission: Submitting substantial portions of the same work for credit more than once without receiving the prior explicit consent of the instructor to whom the material is being submitted the second or subsequent time.
Forgery: Imitating another person’s signature on academic or other official documents, including class material.

Sabotage: Willfully destroying, damaging, or stealing of another's work or working materials (including lab experiments, computer programs, term papers, digital files, or projects).

Unauthorized Collaboration: Collaborating on projects, papers, or other academic exercises when this is forbidden by the instructor(s). The default faculty assumption is that work submitted for credit is entirely one's own. At the same time, standards on appropriate and inappropriate collaboration as well as the need for collaboration vary across courses and disciplines. Therefore, students who want to confer or collaborate with one another on work receiving academic credit should seek the instructor's permission to collaborate.

Falsification: Misrepresenting material or fabricating information in an academic exercise or assignment (for example, the false or misleading citation of sources, the falsification of experimental or computer data, etc.).

Bribery: Offering or giving any article of value or service to an instructor in an attempt to receive a grade or other benefits not legitimately earned or not available to other students in the class.

Theft, Damage, or Misuse of Library or IT Resources: Removing uncharged library materials from the library, defacing or damaging library materials, intentionally displacing or hoarding materials within the library for one's unauthorized private use, or other abuse of reserve-book privileges. Any violation of the University’s Responsible Use of Information Technology policy. This includes, but is not limited to, unauthorized use of the University's or another person's computer accounts, codes, passwords, or facilities; damaging computer equipment or interfering with the operation of the computing system of the University.

Academic dishonesty will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process. For more information (please refer to the Community Rights and Responsibilities booklet)
## COURSE OUTLINE: EPI 619: DIABETES EPIDEMIOLOGY – Spring 2013
(subject to change upon notice)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Lecturer</th>
<th>Reading</th>
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</thead>
<tbody>
<tr>
<td>1/23</td>
<td><strong>Basic Preparation: 4 Segments</strong>&lt;br&gt;Course Overview &amp; Introduction to Diabetes Epidemiology</td>
<td>Dr. Hosler</td>
<td>HOD 1,2,4</td>
</tr>
<tr>
<td>1/30</td>
<td><strong>Biology, Diagnosis, and Treatment of Diabetes</strong></td>
<td>Dr. Desemone, MD Ellis Medicine</td>
<td>HOD 3,5,8,14, Homework given</td>
</tr>
<tr>
<td>2/6</td>
<td><strong>Landmark Diabetes Studies and Milestones</strong> (Large Cohort Studies and Multi-Center RCTs)</td>
<td>Dr. Hosler</td>
<td>HOD 6,7 Homework due</td>
</tr>
<tr>
<td>2/13</td>
<td><strong>Diabetes Education and Self-Management</strong></td>
<td>Ms. DeNovio, Ellis Medicine</td>
<td>HOD 9,10,11,26,31</td>
</tr>
<tr>
<td>2/20</td>
<td><strong>Core Epidemiology Topics: 6 Segments</strong>&lt;br&gt;Epidemiology of Diabetes Complications: Acute, and Primary (Groups A)</td>
<td>Dr. Hosler &amp; student presenters</td>
<td>HOD 12,13,15,16,17,18,19,20</td>
</tr>
<tr>
<td>2/27</td>
<td><strong>Epidemiology of Diabetes Complications: Secondary and Combination (Group B)</strong></td>
<td>Dr. Hosler &amp; Student presenters</td>
<td>HOD 21,22,23,24,25</td>
</tr>
<tr>
<td>3/6</td>
<td><strong>Epidemiology of Diabetes in Pregnancy</strong></td>
<td>Dr. Hosler</td>
<td>HOD 27, ADA and ACOG Guidelines</td>
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<tr>
<td>3/13</td>
<td><strong>Diabetes in Diverse Populations (Group C)</strong></td>
<td>Dr. Hosler &amp; student presenters</td>
<td>n/a</td>
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<tr>
<td>3/20</td>
<td>☼SPRING BREAK☼</td>
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<tr>
<td>3/27</td>
<td><strong>Epidemiology of Diabetes Risk Factors (Group D)</strong></td>
<td>Dr. Hosler &amp; student presenters</td>
<td>HOD 30</td>
</tr>
<tr>
<td>4/3</td>
<td><strong>Evidence-Based Diabetes Care Interventions (Group E)</strong></td>
<td>Dr. Hosler &amp; student presenters</td>
<td>n/a</td>
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<tr>
<td>4/10</td>
<td><strong>Emerging and Applied Epidemiology Topics: 4 Segments</strong>&lt;br&gt;Albany Medical College Goodman Diabetes Symposium</td>
<td>At Hilton Garden Inn, Troy</td>
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<tr>
<td>4/17</td>
<td><strong>Epidemiology of Diabetes in Children</strong></td>
<td>Dr. Hosler</td>
<td>HOD 28</td>
</tr>
<tr>
<td>4/24</td>
<td><strong>Prevention of Type 2 Diabetes &amp; Diabetes Screening</strong></td>
<td>Dr. Hosler</td>
<td>TBA</td>
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<tr>
<td>5/1</td>
<td><strong>Diabetes Translation Research : Round table discussion</strong></td>
<td>Dr. Hosler &amp; students</td>
<td>TBA</td>
</tr>
<tr>
<td>5/8</td>
<td><strong>In-class final paper progress report</strong></td>
<td>Dr. Hosler &amp; student presenters</td>
<td></td>
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<tr>
<td>5/13</td>
<td><strong>Final Project Paper Due on or before 11:59 PM</strong></td>
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Diabetes Epidemiology Student Presentation

Topics for student presentations (pick one from 3 different groups)

GROUP A: Diabetic complications - primary

1. Diabetic ketoacidosis
2. Diabetic retinopathy
3. Diabetic nephropathy
4. Diabetes neuropathy
5. Peripheral artery disease
6. Cardiovascular disease

GROUP B: Diabetic complications – secondary or combination

1. Lower extremity amputations
2. Sexual dysfunction
3. Gastrointestinal complications
4. Skin and connective tissue complications
5. Dental and oral complications
6. Mental health

GROUP C: Diabetes in diverse populations

1. African-Americans
2. Hispanics
3. Native-Americans
4. Asian/Pacific Islanders
5. South Asian diasporas
6. Europeans

GROUP D: Diabetes risk factors

1. Smoking
2. Physical inactivity
3. Nutrition
4. Genetic and hereditary factors
5. Living environment

Group E: Evidence-based diabetes care interventions

1. Clinical quality improvement (registry, QC)
2. Telemedicine
3. Community health workers & outreach
4. Diabetes education in community gathering places
5. Policy change
Presentation

- Prior consultation with the instructor about your choice of article highly recommended

- Use Power Point

- Your presentation should have …
  - General overview (include definition), biology/physiology/etiology, descriptive epidemiology (people, time & place) of the topic - approx. 10 slides
  - Choose one recently (<5 years) published Epidemiology article related to the topic (observational, ecologic, or experimental design). Report its background/purpose, methods, results, and implications - approx. 8–10 slides
  - Include slides (2-3) to describe YOUR OWN assessment of the paper in terms of scientific significance, methodological thoroughness, and innovation (strengths) as well as limitations (weaknesses).

- 30 to 40 minutes for presentation, additional 15 to 20 minutes for Q&As and discussion.

- Store your presentation material in a stick (flash) drive and bring it to class. Make handouts for students and the instructor (slides & abstract of the article)

- Submit the final version of the Power Point and full article electronically to the instructor within one week of the presentation. You may edit the content of your Power Point to reflect comments made in class.

- Your presentation will be graded based on
  - Clarity of presentation
  - Organization of materials
  - Relevance of the paper
  - Rigorosity of scientific methods used in the paper
  - Informational value (contribution to scientific knowledge)
  - Originality of your assessment
  - Proper crediting (if copied from other sources, be sure to include citation)
  - Responses to other students’ questions and comments

- Audience: You must come up with at least 2-3 questions or comments.
How to write a review article

**Introduction:**

Brief background and purpose of the paper

**Methods:**

1. **Sources**

   Multiple electronic databases (PubMed, MEDLINE, Cochrane Registries, PsycINFO, OVID, etc.) and/or snowball strategy. Can be supplemented by a hand search of the past 2-3 years of issues of selected journals with a high likelihood of publishing relevant articles

2. **Search Terms and Strategies**

   List Medical Subject Headings (MeSH) keywords used (about 20), dates of publication (eg. January 1998 to December 2008), and other limitations – English language, human subjects, etc.

3. **Inclusion and Exclusion Criteria**

   Describe what are included and excluded (this is done usually by reviewing abstracts)
   
   “Patients of minority backgrounds were either focus of studies (defined as >50% ) or subgroups of larger trials where minority subject data were specifically described. We excluded reports of interventions that were not based in health care settings, involved children …”

   State the number of eligible articles at each stage of inclusion/exclusion.

   A flow chart can be very helpful

**Results**

Narratives of literature review organized by subheadings.

**Discussion**

State overall purposes and a summary of findings, with major strengths

Describe limitations and weaknesses

Discussions –assessment of gaps in the current knowledge, what studies are needed to fill the gap

**Table(s)**

Must include a systematic (database-style) table or tables to summarize your key findings and methodological elements of the papers. Include citations.

**Reference**

JAMA style reference
SYLLABUS, EPI 625 ZOONOSES (3), Spring 2014 [class number 9713]
Fully Online, Asynchronous: Not required to be online at same time

Principal Instructor:
Millicent Eidson, MA, DVM, DACVPM (Epidemiology), Office of Public Health Practice, New York State Department of Health; Associate Professor, Department of Epidemiology, University at Albany School of Public Health; 518-474-5973, Meidson@albany.edu. For an online course, there will be no formal office hours, but instructor will be available throughout the course by email and through Blackboard, the UAlbany system for online courses. Phone discussions for individual students or group of students can be arranged.

Prerequisites: None

Course Description: An overview of zoonotic infectious diseases (those diseases in common between animals and humans), including rabies, potential bioterrorist agents (anthrax, plague, Q fever, tularemia), emerging diseases (avian and swine influenza, West Nile virus, vCJD), and vector-borne diseases (lyme disease). The course addresses the epidemiologic, field, and laboratory methods of investigation, and assessment of surveillance, prevention, control and treatment. Student work will emphasize emerging diseases associated with climate change, including those with an impact on global health.

Learning Objectives:
1. Locate, evaluate, synthesize, and use information from a variety of sources in preparing a review of a zoonotic disease.
2. Utilize the major principles, concepts, models, and epidemiologic facts about zoonoses.
3. Discuss ethical issues involved in accessing and using zoonotic disease information.
4. Communicate zoonotic disease information in a standard scientific oral presentation.
5. Define methods used to study zoonoses, including observation, hypothesis development, measurement and data collection, experimentation, and evaluation of evidence.
6. Research a zoonotic disease topic, organize supporting details, and produce a scientific fact sheet.
7. Compare ethical issues for individuals versus society in control of zoonotic diseases.
8. Recognize the role that the immune system plays a role in zoonotic diseases including confirmation of infection.
9. Recognize the complexity of the types of laboratory tests and their limitations for confirmation of zoonotic diseases.
10. Identify epidemiologic clues associated with zoonotic diseases that may indicate a bioterrorism event.
11. Know key partners in responding to a potential zoonotic bioterrorism event.

ASPH MPH Competencies (and whether competencies are primarily gained or reinforced)
• Apply basic terminology and definitions of epidemiology (primary)
• Identify key sources of data for epidemiologic purposes (primary)
• Describe a public health problem in terms of magnitude, person, time and place (primary)
• Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues (primary)
• Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data (primary)
• Communicate epidemiologic information to lay and professional audiences (primary)
- Calculate basic epidemiology measures (reinforcing)
- Draw appropriate inferences from epidemiology data (primary)
- Evaluate the strengths and limitations of epidemiologic reports (primary)
- Specify the role of the immune system in population health (primary)
- Integrate biological and molecular concepts into public health (primary)
- Distinguish between population and individual ethical considerations in relation to the benefits, costs, and burdens of public health programs (primary)

ASPH Public Health Preparedness & Response Core Competencies (primary or reinforced)
- Solve problems under emergency conditions (primary)
- Facilitate collaboration with internal and external emergency response partners (primary)

Text/readings: Required for student purchase or checking out of library—Quammen, David. Spillover: Animal Infections and the Next Pandemic. Norton, WW & Co., Inc., 2013. Other articles and materials required for reading and exams will be provided on the course Blackboard site. See separate handout for details of software and internet access requirements. Requirements include access to email, internet, Blackboard, Microsoft Word, Excel, Powerpoint, and Adobe Reader.

Course Justification: Zoonotic disease agents account for most of potential bioterrorism agents and emerging diseases. A course on the epidemiology of zoonoses is a core component of infectious disease epidemiology training and will be helpful to those pursuing global health, preparedness, or vector-borne disease careers. Zoonotic disease surveillance, laboratory, field investigation, prevention, and control approaches provide good training for infectious disease epidemiologic investigations overall. Preparation of an oral presentation and fact sheet will be good training and preparation for students in public health careers.

Grading: Each major component is worth one-fifth of the final grade: Discussions; Open-book Exam 1 (mid-course) and Exam 2 (on second half of semester material, at end of course); Oral Presentation Slides; and Fact Sheet. A possible 100 points will be awarded on each part, and then the total points will be divided by five to generate a final score. There will options for extra credit. Letter grades will be assigned as follows: 95-100 A; 90-94 A-; 87-89 B+; 84-86 B; 80-83 B-; 77-79 C+; 74-76 C; 70-73 C-; 60-69 D; below 60 is F. More detailed instructions for completion of assignments, exams, extra credit, and grading will be provided at the beginning of the course. Both the midterm and final examinations will be taken by students on Blackboard. Exams must be taken alone without help from another person, but they will be open for completion for a week, and students may use online and other resources in completing them.

Oral Presentation and Fact Sheet Guidelines: Each student must choose a different topic, approved by instructor. A list of potential topics will be provided. Students interested in global health are encouraged to pick a related disease. Focus for the development of presentation slides and fact sheets will be on the association of the disease with climate change. Self, peer, and instructor feedback will be utilized by students before developing final submission for grading. Guidelines, templates, and rubrics will be provided. Student work may serve as the basis for slide sets and fact sheets on the NYS Department of Health Commerce or public websites. Students will be provided the option (not requirement) to give their presentation in person for feedback and extra credit points. Student library research (which can be on the Internet or in person at a medical/public health library) will be required to obtain the relevant reference articles. Submission of late materials without prior approval of instructor, or submission of course work that is not solely the work of the student, shall result in course failure.
Academic Integrity: For detailed information on academic integrity, please see the following section: http://www.albany.edu/content_images/AcademicIntegrity.pdf. These guidelines address plagiarism, cheating on exams, multiple submissions, forgery, sabotage, unauthorized collaboration, falsification, bribery, and theft, damage, or misuse of library or IT resources.

“Every student has the responsibility to become familiar with the standards of academic integrity at the University. Faculty members must specify in their syllabi information about academic integrity, and may refer students to this policy for more information. Nonetheless, student claims of ignorance, unintentional error, or personal or academic pressures cannot be excuses for violation of academic integrity. Students are responsible for familiarizing themselves with the standards and behaving accordingly, and UAlbany faculty are responsible for teaching, modeling and upholding them. Anything less undermines the worth and value of our intellectual work, and the reputation and credibility of the University at Albany degree.” (University’s Standards of Academic Integrity Policy, Fall 2013)

Penalties for violations of academic integrity may include, but are not limited to, the following:
1. Warning without further penalty, or with a requirement that an assignment be redone without a breach of academic integrity and resubmitted;
2. Lowering of an assignment/exam grade;
3. Assigning a failing grade on a paper containing plagiarized material;
4. Assigning a failing grade on any examination in which cheating occurred;
5. Lowering a course grade; or
6. Giving a failing grade in a course or other academic exercise

The rules about academic integrity have recently changed, and the differences are summarized in the University Senate bill available at: http://www.albany.edu/senate/images/1213-07_Standards_of_Academic_Integrity-RSF_edit_5-13-13(1).docx
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<td>Module 1, Rabies. Discussion points due by Jan. 29, 11:30 pm.</td>
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<tr>
<td>2/4/14, 11:30 pm</td>
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<td>Module 2, Mosquito-borne diseases. Discussion points due by Feb. 4, 11:30 pm. <strong>Topic chosen for fact sheet and presentation.</strong></td>
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<tr>
<td>2/4/14</td>
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<td>Last day to drop semester course with 30% financial liability and without receiving a “W” on transcript.</td>
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<td>2/10/14, 11:30 pm</td>
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<td>Module 3, Tick-borne diseases. Discussion points due by Feb. 10, 11:30 pm.</td>
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<td>2/24/14, 11:30 pm</td>
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<td>Module 5, Bioterrorism, continued—Anthrax, Q fever. Discussion points due by Feb. 24, 11:30 pm.</td>
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<td></td>
<td>Feedback on own and other powerpoint presentations due March 6, 11:30 pm.</td>
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<tr>
<td>3/7/14, 12:30 am</td>
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<td>Mid-term exam (up to and including Module 5, not including student presentations); Due March 14, 11:30 pm.</td>
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<td>Feedback on own and other fact sheets due by April 7, 11:30 pm</td>
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<td>Module 6, Animals in public settings, <em>Salmonella.</em> Discussion points due by April 7, 11:30 pm.</td>
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<td>5/11/14, 11:30 pm</td>
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<td>Final fact sheets, presentations, and extra credit due for grading by May 11, 11:30 pm</td>
</tr>
<tr>
<td>5/1/14, 8:00 am</td>
<td>5/16/14, 11:30 pm</td>
<td>Final exam (questions primarily on Modules 6-9, student fact sheets and student slide presentations)</td>
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SYLLABUS, EPI 625 ZOO NOSES (3), Spring 2014 [class number 9713]
Fully Online
(Assynchronous: Not required to be online at same time as instructor or other students)

Course Description: An overview of zoonotic infectious diseases (those diseases in common between animals and humans), including rabies, potential bioterrorist agents (anthrax, plague, Q fever, tularemia), emerging diseases (avian and swine influenza, West Nile virus, vCJD), and vector-borne diseases (lyme disease). The course addresses the epidemiologic, field, and laboratory methods of investigation, and assessment of surveillance, prevention, control and treatment. Student work will emphasize emerging diseases associated with climate change, including those with an impact on global health.

Course Objectives:
1. Locate, evaluate, synthesize, and use information from a variety of sources in preparing a review of a zoonotic disease. ASPH MPH Competency C1: Identify key sources of data for epidemiologic purposes.
2. Understand the major principles, concepts, models, and epidemiologic facts about zoonoses. ASPH MPH Competency C3: Describe a public health problem in terms of magnitude, person, time and place.
3. Understand the ethical issues involved in accessing and using zoonotic disease information. ASPH MPH Competency C4: Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues; C5: Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data.
4. Communicate zoonotic disease information in a standard scientific oral presentation. ASPH MPH Competency C8: Communicate epidemiologic information to lay and professional audiences.
5. Understand the methods used to study zoonoses, including observation, hypothesis development, measurement and data collection, experimentation, and evaluation of evidence. ASPH MPH Competency C7: Calculate basic epidemiology measures.
6. Research a zoonotic disease topic, organize supporting details, and produce a scientific fact sheet. ASPH MPH Competency C9: Draw appropriate inferences from epidemiology data; C10: Evaluate the strengths and limitations of epidemiologic reports.
7. Compare ethical issues for individuals versus society in control of zoonotic diseases. ASPH MPH Competency J8: Distinguish between population and individual ethical considerations in relation to the benefits, costs, and burdens of public health programs.
8. Understand how the immune system plays a role in zoonotic diseases including confirmation of infection. ASPH MPH Competency I1: Specify the role of the immune system in population health.
9. Understand the types of laboratory tests and their limitations for confirmation of zoonotic diseases. ASPH MPH Competency I10: Integrate biological and molecular concepts into public health.
10. Learn how to recognize and respond to epidemiologic clues associated with zoonotic diseases that may indicate a bioterrorism event. ASPH Public Health Preparedness & Response Core Competency 1: Solve problems under emergency conditions.
11. Know key partners in responding to a potential zoonotic bioterrorism event. ASPH Public Health Preparedness & Response Core Competency 3: Facilitate collaboration with internal and external emergency response partners.

Prerequisites: None
Principal Instructor:
Millicent Eidson, MA, DVM, DACVPM (Epidemiology), Office of Public Health Practice, New York State Department of Health; Associate Professor, Department of Epidemiology, University at Albany School of Public Health; 518-474-5973, Meidson@albany.edu. For an online course, there will be no formal office hours, but instructor will be available throughout the course by email and through Blackboard, the UAlbany system for online courses. Phone discussions for individual students or group of students can be arranged.

Course Justification: Zoonotic disease agents account for most of potential bioterrorism agents and emerging diseases. A course on the epidemiology of zoonoses is a core component of infectious disease epidemiology training and will be helpful to those pursuing global health, preparedness, or vector-borne disease careers. Zoonotic disease surveillance, laboratory, field investigation, prevention, and control approaches provide good training for infectious disease epidemiologic investigations overall. Preparation of an oral presentation and fact sheet will be good training and preparation for students in public health careers.

Grading: Each major component is worth one-fifth of the final grade: Discussions; Open-book Exam 1 (mid-course) and Exam 2 (on second half of semester material, at end of course); Oral Presentation Slides; and Fact Sheet. A possible 100 points will be awarded on each part, and then the total points will be divided by five to generate a final score. There will options for extra credit. Letter grades will be assigned as follows: 95-100 A; 90-94 A-; 87-89 B+; 84-86 B; 80-83 B-; 77-79 C+; 74-76 C; 70-73 C-; 60-69 D; below 60 is F. More detailed instructions for completion of assignments, exams, extra credit, and grading will be provided at the beginning of the course. Both the midterm and final examinations will be taken by students on Blackboard. Exams must be taken alone without help from another person, but they will be open for completion for a week, and students may use online and other resources in completing them.

Oral Presentation and Fact Sheet Guidelines: Each student must choose a different topic, approved by instructor. A list of potential topics will be provided. Students interested in global health are encouraged to pick a related disease. Focus for the development of presentation slides and fact sheets will be on the association of the disease with climate change. Self, peer, and instructor feedback will be utilized by students before developing final submission for grading. Guidelines, templates, and rubrics will be provided. Student work may serve as the basis for slide sets and fact sheets on the NYS Department of Health Commerce or public websites. Students will be provided the option (not requirement) to give their presentation in person for feedback and extra credit points. Student library research (which can be on the Internet or in person at a medical/public health library) will be required to obtain the relevant reference articles. Submission of late materials without prior approval of instructor, or submission of course work that is not solely the work of the student, shall result in course failure.

Text/readings: Required for student purchase or checking out of library--Quammen, David. Spillover: Animal Infections and the Next Pandemic. Norton, WW & Co., Inc., 2013. Other articles and materials required for reading and exams will be provided on the course Blackboard site.

Course electronic requirements: See separate handout for details of software and internet access requirements. Requirements include access to email, internet, Blackboard, Microsoft Word, Excel, Powerpoint, and Adobe Reader.
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<td>5/16/14, 11:30 pm</td>
<td>Final exam (questions primarily on Modules 6-9, student fact sheets and student slide presentations)</td>
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On-line class HSTA552, Principles of Statistical Inference, Spring 2014

Course Organization

The course will be run exclusively on-line through the Blackboard Learning System (BLS). The class is structured as a set of sequential learning modules, each covering a particular set of topics. Each module consists of a reading assignment and a problem set assignment. There will be midterm and final exams. The syllabus, class notes, readings, assignments, exams, and class announcements will be available from the course website on the Blackboard Learning System (BLS) system.

<table>
<thead>
<tr>
<th>Course instructor:</th>
<th>Igor Kuznetsov</th>
</tr>
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<tbody>
<tr>
<td>“Virtual office hours” when the instructor will log on to the BLS: Random times, Monday through Sunday.</td>
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<th>Wei Zhang</th>
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<td>Semester:</td>
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</table>

<table>
<thead>
<tr>
<th>Mailing Address:</th>
<th>One Discovery Drive University at Albany Rensselaer, NY 12144</th>
</tr>
</thead>
</table>

| E-mail Address | All questions concerning the course should be asked using the discussions tool. If you wish to send a note not intended to be viewed by the class, please contact the instructor at ikuznetsov@albany.edu and the TA at zhangw.1@hotmail.com We would appreciate you using these e-mail addresses sparingly. |

The course will officially begin on January 22 and end on May 8.

NOTE: Though you will have access to the course before January 22, I will start monitoring the discussion and answering your questions only when the semester officially begins on January 22.
## Contact information

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• **Course schedule**

<table>
<thead>
<tr>
<th>Module</th>
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<tbody>
<tr>
<td>Before Class begins</td>
<td>Prior to 1/22</td>
<td>Read all the material in Course Information</td>
</tr>
<tr>
<td>Ice Breaker Activity Module</td>
<td>1/22 – 1/26</td>
<td>Read all the material in this module and perform all required activities. Same applies to all other modules.</td>
</tr>
<tr>
<td>Descriptive Statistics Module</td>
<td>1/27 – 2/10</td>
<td>Assignment is due on 2/9</td>
</tr>
<tr>
<td>Probability and Probability Distributions Module</td>
<td>2/11 – 2/25</td>
<td>Assignment is due on 2/24</td>
</tr>
<tr>
<td>Estimation Module</td>
<td>2/26 – 3/13</td>
<td>Assignment is due on 3/12</td>
</tr>
<tr>
<td>Review and Midterm</td>
<td>3/14 – 3/16</td>
<td>Midterm is due on 3/15</td>
</tr>
<tr>
<td>Hypothesis Testing Module</td>
<td>3/17 – 4/14</td>
<td>First assignment is due on 4/3, second is due on 4/13</td>
</tr>
<tr>
<td>Non-Parametrics, Regression and Correlation Module</td>
<td>4/15 – 5/8</td>
<td>Assignment is due on 5/7</td>
</tr>
<tr>
<td>Review and Final</td>
<td>5/10 – 5/12</td>
<td>Final is due on 5/11</td>
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</table>

All the assigned readings, problem sets, and all other course materials will be available for each module from the Blackboard Learning System when the module becomes active. Notes and readings will be posted as Adobe Acrobat PDF files. Assignments will be distributed as Word (.doc) files so that you can use the files as a template for typing your assignments.

• **Course Goals and Objectives**

This course is designed to teach public health students the basic principles of biostatistics. It can be a first course in biostatistics for those students who will use the knowledge they acquire to enable them to continue learning more advanced techniques in future statistical and biostatistical course work. It can also serve as the necessary base course in biostatistics for those who will go no further in acquiring advanced skills in biostatistics but who can use the knowledge they acquire to intelligently read journal articles that use biostatistical methods, interact effectively with professional biostatisticians in collaborative endeavors and understand the terminology of one of the core disciplines of public health.

**Objectives and Competencies:**

Competencies have recently been developed by the Association of Schools of Public Health for each of the core areas in public health. They are defined as a “Core Set of Applied Knowledge, Skills, and other Attributes … for the Broad Practice of Public Health”. By mastering the competencies, you will have the expertise needed to succeed
in the workplace as a public health professional. In biostatistics, the core competencies are:

- Describe the roles biostatistics serves in the discipline of public health.
- Describe basic concepts of probability, random variation and commonly used statistical probability distributions.
- Describe preferred methodological alternatives to commonly used statistical methods when assumptions are not met.
- Distinguish among the different measurement scales and the implications for selection of statistical methods to be used based on these distinctions.
- Apply descriptive techniques commonly used to summarize public health data.
- Apply common statistical methods for inference.

- Apply descriptive and inferential methodologies according to the type of study design for answering a particular research question.
- Apply basic informatics techniques with vital statistics and public health records in the description of public health characteristics and in public health research and evaluation.
- Interpret results of statistical analyses found in public health studies.
- Develop written and oral presentations based on statistical analyses for both public health professionals and educated lay audiences.

This course is designed to address these competencies through a set of learning objectives. Specifically, by the end of this course you will:

- be able to use and understand the principal numeric and graphical techniques to display and summarize medical and health related data
- be able to understand the basic principles of probability and how they relate to biostatistics
- be familiar with the common probability distributions used in statistics
- be able to know what drawing a random sample from a population means and why it is important
- be familiar with the concept of statistical inference
- be able to estimate the value of various population parameters from a sample of data
- be able to test the hypothesis that the value of a population parameter equals a certain value
- be able to apply most common statistical tests to compare two or more samples of data
- be able to discuss and explain what biostatistics is and how it is used in the field of public health
- be able to participate in discussions about any topic or subject using skills developed in this course
- be able to understand the common statistical techniques and terminology used in studies that are presented in the popular press and health related journals.
This sounds like a lot, but, these objectives are attainable for any student who gives a reasonable effort in this course. It will not require a super human effort, just a desire to learn, a willingness to regularly participate, and a dedication to complete all assignments in a timely manner.

- **Textbooks and Software**

  This course uses *Fundamentals of Biostatistics, 7th Edition* by Bernard Rosner as the required principal textbook. You can purchase this text new or used on-line at many of the retail outlets that sell books (Amazon, Barnes & Noble, check ICHAPTERS for a discounted price, etc., Abe's Books ---- a good site for used books). You can also rent the book or purchase the e-book (this will be less expensive, but remember that you can always sell your hardcopy because this textbook is very popular). It is important to remember that you use the 7th edition in that earlier editions are different in many ways, for example, page numbers are different across editions. Also, you might see an International Edition for sale, if you buy this edition, be aware that page numbers in this version are different from the 7th edition I have.

  A recommended but not required supplemental text is *The Cartoon Guide to Statistics* by Larry Gonick and Woollcott Smith. It is a soft-cover book and can also be purchased on-line. A new copy is less than $15 (as with Rosner, there are used copies available on the web). This book is not required but our previous students have found that it helps to understand the material in Rosner. Prior students have also suggested *Intuitive Biostatistics* by Harvey Motulsky.

  Each student is required to purchase access to a web based statistical software package called StatCrunch ([www.statcrunch.com](http://www.statcrunch.com)). You can purchase access to the software for 6 months for $13.50. Information on how to purchase your access is available on the StatCrunch web site. Just click on SUBSCRIBE/GET ACCESS (found on the left side of the web page). Third-party tutorials for StatCrunch can be found at [http://www4.stat.ncsu.edu/~woodard/statcrunch/](http://www4.stat.ncsu.edu/~woodard/statcrunch/)

- **How You Will Be Evaluated**

  Your success in this course depends to a large degree on your participation in assignments/discussions. All problem solving assignments or other assignments have a DUE DATE. YOUR ANSWERS TO THESE ASSIGNMENTS WILL NOT BE GRADED, BUT THEY SHOULD BE COMPLETED THOUGHTFULLY AND IN A TIMELY MANNER. The submitted answers will be made available to all students in the class for discussion. Solutions to the problems will also be made available after the due date. Everyone will participate in a discussion about the assignments with the goal being that each student will understand the material at the end of the discussion period. All students should understand what the correct answers are and how they were arrived at. All students, by participating in the discussion and learning from others, should be able to
comprehend the material that was demonstrated by the correct solution to the problem. The purpose of this activity is to insure that the entire class, by discussing problems, their solutions and the pertinent statistical techniques, will come to an understanding of the subject material. Your assignment grade counts toward 40% of your final grade in this course. The midterm exam is worth 30% of your final grade and the final exam is worth 30% of your final grade. The grades will be assigned as follows:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>[90%-100%]</td>
<td>A</td>
</tr>
<tr>
<td>[85%-90%]</td>
<td>A-</td>
</tr>
<tr>
<td>[80%-85%]</td>
<td>B+</td>
</tr>
<tr>
<td>[75%-80%]</td>
<td>B</td>
</tr>
<tr>
<td>[70%-75%]</td>
<td>B-</td>
</tr>
<tr>
<td>[65%-70%]</td>
<td>C+</td>
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<tr>
<td>[60%-65%]</td>
<td>C</td>
</tr>
<tr>
<td>[55%-60%]</td>
<td>C-</td>
</tr>
<tr>
<td>Less than 55%</td>
<td>fail</td>
</tr>
</tbody>
</table>

- **Expectations**

  The most important expectations are that you work diligently, learn the subject matter, and enjoy your experience. If the course meets those expectations, then it has been a success. To insure success in meeting these expectations you must be an active participant in this course. The following are expected from each of you:

  - That you will log onto the course on a regular basis. You need to treat this like any traditional course. *Please remember that if you were taking this course in the classroom, your class would meet 2 times per week for 1.5 hours, or 3 hours per week. Add in time to read and complete homework and you would easily be spending 12 hours or more per week. This on line course requires the same time commitment.*
  
  - That you read the module documents and complete the reading assignments (both in the textbooks and other sources) according to the schedule provided.
  
  - You need to submit solutions to the problems on time. While answers to written assignments are not graded as explained earlier, points can and will be subtracted from your module grade if you do not submit an assignment, are late submitting, or submit something judged as less than full effort.
- You need to actively participate in the discussion for each Module. As noted earlier, the primary learning experience in this class takes place in discussion between you and the instructors and among the students. The discussion will allow us, as a group, to look at the answers to the problems that you have submitted, correct misunderstandings, focus on why something is correct, expand upon topics covered in readings and lectures and finally all agree what the correct answer to the problem is. If you do not actively participate on a regular basis, then you will diminish your ability to comprehend the subject matter.

- There will be no collaboration of any kind when completing the midterm and final exams. There will be no discussion among students about the exam while it is being completed, though "Ask Professor" discussion board can be used for clarification of questions. Exams are, by necessity, open book. You are free to use your texts or any other outside source when completing the exam but you are not permitted to discuss the exam with anyone other than the instructor.

- **Standards of conduct**

All students need to be aware of the University at Albany's standards of conduct (http://www.albany.edu/studentconduct/introduction.php). This document itemizes the standards related to academic dishonesty, provides complete definitions of each type of misconduct and summarizes the penalties for violations of academic integrity. Please familiarize yourself with the contents of this document. Should problems arise during this course, a lack of knowledge of the content of this document cannot be used as a defense in determining the outcome of possible violations of the standards.
Key Information

Instructor: Tao Lu
Department of Epidemiology and Biostatistics
Email: tlu2@albany.edu

TA: Not assigned

Time: Monday and Wednesday, 2:30 pm-3:50pm

Location: Classroom C4

Prerequisites: HSTA 552

Peter Dalgaard
Springer, 2008

1. Course Organization

The syllabus and other course materials, including lecture notes, project assignments, homework assignments will be sent to the students through emails.

2. Course Goals and Objectives

The purpose of this course is to familiarize you with commonly used elementary data analytic techniques, including data summarization; one-sample confidence intervals and hypothesis tests; two-sample inferences; checking assumptions; one-way analysis of variance with multiple comparisons and so on. The statistical package R will be used for calculations.

3. Competencies

This course teaches topics and skills that relate to competencies considered critical by the Association of Schools of Public Health (ASPH) for all graduates, including the use of statistical software to analyze health-related data.

4. Reading Materials

Textbooks in the following list provides a general/remedial reading material.

- *SAS for Linear Models* 4th ed. by Litell, Stroup and Freund (2002). Published by SAS publishing
5. Grading

Your grade in this course will be calculated based on your performance on the project assignments, homework assignments, midterm exam and final exam. The midterm and final exams will be closed-book and held in class.

Your grade will be calculated based on your performance as follows:

- Homework assignments: 20%
- Project assignments: 20%
- Midterm exam: 30%
- Final exam: 30%

Project Assignments
The purpose of this project is to give you an opportunity to practice working in a group (of 3 people) on an interesting question from soup to nuts: initial concept, feasibility, data collection, analysis, validation, and communicating the results.

The students shall form their teams and notify the instructor through email. The project materials including data, code, presentation slides and so on shall be submitted to the instructor through email three days before the presentation date.

Those who missed each deadline will lose 20% of the total points for each day of delay. The team that does not present its work on scheduled date and time will receive no grade.

Homework Assignments
Written homework problems will be assigned after each chapter; assignments turned in after the due date will not be accepted.

Examinations
There is one midterm exam and one final exam for this course. Both exams will be closed book and will be held in class. Any formulas needed for the midterm and final exams will be provided by the instructor. The final exam is cumulative but will focus on material from the second half of the course.

6. Miscellaneous

Statistical software
R will be the primary statistical software package used in this class. Students may use different statistical software, but assistance and technical support is not guaranteed.

Cheating
Academic dishonesty (please refer to the Community Rights and Responsibilities booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

Courtesy
As a courtesy to the instructor and your fellow students, the use of cell phones (including text messaging) is not permitted during class time. Please remember to silence your phone before class begins.

7. General Policies

Technology devices
The use of cell phones, iPhones, iPods, iPads, and other technology devices IS FORBIDDEN and should be turned off and put away prior to class. If someone is caught using such technology, they will be given a warning in the first instance. The second time s/he will be penalized with 10% off from midterm exam score. This rule will be strictly enforced!

Class etiquette
The classroom is a learning environment and as such, it is expected that students do their best to minimize disruptions that can distract from their learning and that of their peers. Students are expected to come to class on time and not to leave except in the case of emergency situations.

Absences
It is the student's responsibility to obtain notes, etc., for material covered during the absence.

Disabled Students
The classroom is a learning environment and as such, it is expected that students do their best to minimize disruptions that can distract from their learning and that of their peers. Students who qualify for extra accommodations because of a diagnosed disability should submit a letter to the professor from Disabled Student Services no later than the third week of class so that arrangements can be made as needed. Disabled Student Services is located in Campus Center 137 (518-442-5490): http://www.albany.edu/disability/index.shtml

Academic Integrity
Students must comply with all University standards of academic integrity. As stated on the graduate bulletin, “Claims of ignorance, of unintentional error, or of academic or personal pressures are not sufficient reasons for violations of academic integrity.” If a student is discovered to not comply with academic integrity standards, the student will be reported to the Office of Graduate Admissions AND receive either a warning, be told to rewrite the plagiarized material, receive a lowering of a paper or project grade of at least one full grade, receive a failing grade for a project containing plagiarized material or examination in which cheating occurred, receive a lowering of course grade by one full grade or more, or a failing grade for the course depending on the infraction. Types of violations include:

Plagiarism: Presenting as one's own work, the work of another person (for example, the words, ideas, information, data, evidence, organizing principles, or style of presentation of someone else). Plagiarism includes paraphrasing or summarizing without acknowledgment, submission of another student's work as one's own, the purchase of prepared research or completed papers or projects, and the unacknowledged use of research sources gathered by someone else. Failure to indicate accurately the extent and precise nature of one's reliance on other sources is also a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. Examples of plagiarism include: failure to acknowledge the source(s) of even a few phrases, sentences, or paragraphs; failure to acknowledge a quotation or paraphrase of paragraph-length sections of a paper; failure to acknowledge the source(s) of a major idea or the source(s) for an ordering principle central to the paper's or project's structure; failure to acknowledge the source (quoted, paraphrased, or summarized) of major sections or passages in the paper or project; the unacknowledged use of several major ideas or extensive reliance on another person's data, evidence, or critical method; submitting as one's own work, work borrowed, stolen, or purchased from someone else.
Cheating on Examinations: Giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include collaboration of any sort during an examination (unless specifically approved by the instructor); collaboration before an examination (when such collaboration is specifically forbidden by the instructor); the use of notes, books, or other aids during an examination (unless permitted by the instructor); arranging for another person to take an examination in one's place; looking upon someone else's examination during the examination period; intentionally allowing another student to look upon one's exam; the unauthorized discussing of the test items during the examination period; and the passing of any examination information to students who have not yet taken the examination. There can be no conversation while an examination is in progress unless specifically authorized by the instructor.

Unauthorized Collaboration: Collaborating on projects, papers, or other academic exercises which is regarded as inappropriate by the instructor(s). Although the usual faculty assumption is that work submitted for credit is entirely one's own, standards on appropriate and inappropriate collaboration vary widely among individual faculty and the different disciplines. Students who want to confer or collaborate with one another on work receiving academic credit should make certain of the instructor's expectations and standards.

Multiple Submission: Submitting substantial portions of the same work for credit more than once, without the prior explicit consent of the instructor(s) to whom the material is being (or has in the past been) submitted.

Falsification: Misrepresenting material or fabricating information in an academic exercise or assignment (for example, the false or misleading citation of sources, the falsification of experimental or computer data, etc.)

Sabotage: Destroying, damaging, or stealing of another's work or working materials (including lab experiments, computer programs, term papers, or projects).

8. Office Hours

Wed 1-2pm or by appointment
HSTA 559 – Method of Data Analysis II
Course Syllabus, Spring 2014

Key Information

_Instructor:_ Tao Lu
Department of Epidemiology and Biostatistics
Email: thu2@albany.edu

_TA:_ Not assigned

_Time:_ Monday and Wednesday, 1:00 pm-2:20pm

_Location:_ Classroom C2

_Prerequisites:_ HSTA 558

_Textbook:_ *Introductory Statistics with R (2nd edition)*
Peter Dalgaard
Springer, 2008

1. Course Organization

The topics of each lecture along with assignment due dates are listed in section 9 below. The syllabus and other course materials, including lecture notes, project assignments, homework assignments will be sent to the students through emails.

2. Course Goals and Objectives

The overall goal of this course is to develop a broad and thorough working knowledge of data analysis techniques at a practical and conceptual level. We use the fundamental building blocks taught in HSTA 558 to learn analytical techniques used in multivariate data analyses. As listed under the tentative coverage below, this course is designed to survey a number of multivariate techniques. Mathematical rigor will not be the primary aim of this course, however, as needed, occasional in-depth discussion at a mathematical level will be given. While mathematical depth is not given, the students are expected to know matrix algebra and calculus. As we did in HSTA558, we will use R to perform computations and illustrate the methods. Recall that R is available as Free Software under the terms of the Free Software Foundation's GNU General Public License in source code form.

3. Competencies

This course teaches topics and skills that relate to competencies considered critical by the Association of Schools of Public Health (ASPH) for all graduates, including the use of statistical software to analyze health-related data.

4. Reading Materials

Textbooks in the following list provides a general/remedial reading material.
5. Grading

Your grade in this course will be calculated based on your performance on the project assignments, homework assignments, midterm exam and final exam. The midterm and final exams will be closed-book and held in class.

Your grade will be calculated based on your performance as follows:

Homework assignments: 20%
Project assignments: 20%
Midterm exam: 30%
Final exam: 30%

Project Assignments
The purpose of this project is to give you an opportunity to practice working in a group (of 3 people) on an interesting question from soup to nuts: initial concept, feasibility, data collection, analysis, validation, and communicating the results.
The students shall form their teams and notify the instructor through email by 4/2. The project materials including data, code, presentation slides and so on shall be submitted to the instructor through email three days before the presentation date.
Those who missed each deadline will lose 20% of the total points for each day of delay. The team that does not present its work on scheduled date and time will receive no grade.

Homework Assignments
Written homework problems will be assigned after each chapter; assignments turned in after the due date will not be accepted.

Examinations
There is one midterm exam and one final exam for this course. Both exams will be closed book and will be held in class. Any formulas needed for the midterm and final exams will be provided by the instructor. The final exam is cumulative but will focus on material from the second half of the course.

6. Miscellaneous

Statistical software
R will be the primary statistical software package used in this class. Students may use different statistical software, but assistance and technical support is not guaranteed.

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Academic dishonesty (please refer to the *Community Rights and Responsibilities* booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

*Courtesy*
As a courtesy to the instructor and your fellow students, the use of cell phones (including text messaging) is not permitted during class time. Please remember to silence your phone before class begins.

7. **General Policies**

*Technology devices*
The use of cell phones, iPhones, iPods, iPads, and other technology devices IS FORBIDDEN and should be turned off and put away prior to class. If someone is caught using such technology, they will be given a warning in the first instance. The second time s/he will be penalized with 10% off from midterm exam score. This rule will be strictly enforced!

*Class etiquette*
The classroom is a learning environment and as such, it is expected that students do their best to minimize disruptions that can distract from their learning and that of their peers. Students are expected to come to class on time and not to leave except in the case of emergency situations.

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Types of violations include:

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a form of plagiarism. The student is responsible for understanding the legitimate use of sources, the appropriate ways of acknowledging academic, scholarly, or creative indebtedness, and the consequences for violating University regulations. Examples of plagiarism include: failure to acknowledge the source(s) of even a few phrases, sentences, or paragraphs; failure to acknowledge a quotation or paraphrase of paragraph-length sections of a paper; failure to acknowledge the source(s) of a major idea or the source(s) for an ordering principle central to the paper's or project's structure; failure to acknowledge the source (quoted, paraphrased, or summarized) of major sections or passages in the paper or project; the unacknowledged use of several major ideas or extensive reliance on another person's data, evidence, or critical method; submitting as one's own work, work borrowed, stolen, or purchased from someone else.

**Cheating on Examinations**: Giving or receiving unauthorized help before, during, or after an examination. Examples of unauthorized help include collaboration of any sort during an examination (unless specifically approved by the instructor); collaboration before an examination (when such collaboration is specifically forbidden by the instructor); the use of notes, books, or other aids during an examination (unless permitted by the instructor); arranging for another person to take an examination in one's place; looking upon someone else's examination during the examination period; intentionally allowing another student to look upon one's exam; the unauthorized discussing of the test items during the examination period; and the passing of any examination information to students who have not yet taken the examination. There can be no conversation while an examination is in progress unless specifically authorized by the instructor.

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**Sabotage**: Destroying, damaging, or stealing of another's work or working materials (including lab experiments, computer programs, term papers, or projects).

8. **Office Hours**

Wed 2:30-3:30 or by appointment
### Schedule of Lectures and Assignments

<table>
<thead>
<tr>
<th>Date</th>
<th>Lecture</th>
<th>Assignment Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/22</td>
<td>W Lecture 1 – Introduction, R, review</td>
<td></td>
</tr>
<tr>
<td>1/27</td>
<td>M Lecture 2 – Review</td>
<td></td>
</tr>
<tr>
<td>1/29</td>
<td>W Lecture 3 – Introduction to Multiple Linear Regression</td>
<td></td>
</tr>
<tr>
<td>2/3</td>
<td>M Lecture 4 – Introduction to Multiple Linear Regression</td>
<td></td>
</tr>
<tr>
<td>2/5</td>
<td>W Lecture 5 – A Taste of Model Selection for Multiple Linear Regression</td>
<td></td>
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<tr>
<td>2/10</td>
<td>M Lecture 6 – Experimental Design: One and Two Factor Designs</td>
<td>HW1 due</td>
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<tr>
<td>2/12</td>
<td>W Lecture 7 – Paired Experiments and Randomized Block Designs</td>
<td></td>
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<tr>
<td>2/17</td>
<td>M Lecture 8 – Paired Experiments and Randomized Block Designs</td>
<td>HW2 due</td>
</tr>
<tr>
<td>2/19</td>
<td>W Lecture 9 – Discussion of Observational Studies</td>
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<tr>
<td>2/24</td>
<td>M Lecture 10 – Analysis of Covariance: Comparing Regression Lines</td>
<td>HW3 due</td>
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<tr>
<td>2/26</td>
<td>W Lecture 11 – Polynomial Regression</td>
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<tr>
<td>3/3</td>
<td>M Lecture 12 – Response Models with Factors and Predictors</td>
<td>HW4 due</td>
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<tr>
<td>3/5</td>
<td>W Lecture 13 – Response Models with Factors and Predictors</td>
<td></td>
</tr>
<tr>
<td>3/10</td>
<td>M Lecture 14 – Automatic Model Selection for Multiple Regression</td>
<td></td>
</tr>
<tr>
<td>3/12</td>
<td>W Lecture 15 – Midterm review</td>
<td>HW5 due</td>
</tr>
<tr>
<td>3/17</td>
<td>M No Class</td>
<td></td>
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<tr>
<td>3/19</td>
<td>W No Class</td>
<td></td>
</tr>
<tr>
<td>3/24</td>
<td>M Mid-term Exam</td>
<td></td>
</tr>
<tr>
<td>3/26</td>
<td>W Lecture 16 – Model Selection for Multiple Regression</td>
<td></td>
</tr>
<tr>
<td>3/31</td>
<td>M Lecture 17 – An Introduction to Multivariate Method</td>
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<tr>
<td>4/2</td>
<td>W Lecture 18 – Principal Components Analysis (PCA)</td>
<td>Project team formation due</td>
</tr>
<tr>
<td>4/7</td>
<td>M Lecture 19 – Principal Components Analysis (PCA)</td>
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<tr>
<td>4/9</td>
<td>W Lecture 20 – Cluster Analysis and MANOVA</td>
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<tr>
<td>4/14</td>
<td>M Lecture 21 – Discriminant Analysis</td>
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<tr>
<td>4/16</td>
<td>W Lecture 22 – Classification</td>
<td>HW6 due</td>
</tr>
<tr>
<td>4/21</td>
<td>M Lecture 23 – Factor Analysis</td>
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<tr>
<td>4/23</td>
<td>W Lecture 24 – Factor Analysis</td>
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<tr>
<td>4/28</td>
<td>M Lecture 25 – Factor Analysis</td>
<td></td>
</tr>
<tr>
<td>4/30</td>
<td>W Project presentation</td>
<td>Project material submission due 3 days before presentation</td>
</tr>
<tr>
<td>5/5</td>
<td>M Project presentation</td>
<td></td>
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<tr>
<td>5/7</td>
<td>W Project presentation</td>
<td></td>
</tr>
<tr>
<td>5/12</td>
<td>M Final Exam</td>
<td></td>
</tr>
</tbody>
</table>

- This is a tentative schedule. The actual schedule may be different based on the progress of the class.
- This version of syllabus will replace any previous versions of syllabus for this course. The instructor reserves the right to make further update/modification.
HSTA666: Calendar & Syllabus Spring 2013

Meeting time: Tuesday and Thursday, 9:00-10:20, classroom C3.

Instructor: Greg DiRienzo, Department of Epidemiology & Biostatistics.
Email: adirienzo@albany.edu
Office phone: 518-402-0394

Course description: Topics in survival functions, hazard rates, life tables, estimation of survival functions from complete and censored data, fitting semi-parametric models, tests of hypotheses, and covariate models

Prerequisites: Mathematical Statistics sequence (calculus based) or Equivalent.

Learning objectives: To explain the underlying theory of survival data methodology using a counting process framework and to conduct data analyses using such methods using statistical software.

Competencies: To analyze a dataset with censored outcome and explain the theoretical underpinnings that lead to choosing the appropriate analysis methodology.

Course grade (A-E): 30% Homework - written and data analysis, 9 assignments
- no late homework accepted
30% Midterm exam (in class written)
40% Final exam (in class written)
NO MAKEUP EXAMS GIVEN

Software: May use any software; only SAS (and some STATA and R) will be supported in lectures.

Course webpage: SUNY Albany Course Reserves at https://ereserves.albany.edu/
All class material will be put here (lecture notes, homework assignments, etc).


Office hours: Tuesday and Thursday immediately after class or by appointment

ACADEMIC INTEGRITY: “Every student has the responsibility to become familiar with the standards of academic integrity at the University. Faculty members must specify in their syllabi information about academic integrity, and may refer students to this policy for more information. Nonetheless, student claims of ignorance, unintentional error, or personal or academic pressures cannot be excuses for violation of academic integrity. Students are responsible for familiarizing themselves with the standards and behaving accordingly, and UAlbany faculty are responsible for teaching, modeling and upholding them. Anything less undermines the worth and value of our
intellectual work, and the reputation and credibility of the University at Albany degree.” (University’s Standards of Academic Integrity Policy, Fall 2013)

Thus use of cell phones and internet browsing is not allowed during class. Leave the classroom if you need to use your cell phone.

<table>
<thead>
<tr>
<th>Lecture (Date)</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (Jan 24)</td>
<td>Parametric distributions; Types of censoring</td>
</tr>
<tr>
<td>2 (Jan 29)</td>
<td>Likelihood construction; Inference</td>
</tr>
<tr>
<td>3 (Jan 31)</td>
<td>Introduction to stochastic processes</td>
</tr>
<tr>
<td>4 (Feb 05)</td>
<td>Types of convergence of stochastic processes</td>
</tr>
<tr>
<td>5 (Feb 07)</td>
<td>Kaplan-Meier estimator; Nelson-Aalen estimator</td>
</tr>
<tr>
<td>6 (Feb 12)</td>
<td>Logrank test and extensions - stratified test, comparing more than two groups</td>
</tr>
<tr>
<td>7 (Feb 14)</td>
<td>Cox proportional hazards model and partial likelihood</td>
</tr>
<tr>
<td>8 (Feb 19)</td>
<td>Cox model examples</td>
</tr>
<tr>
<td>9 (Feb 21)</td>
<td>Cox model extensions - stratified model, time dependent covariates</td>
</tr>
<tr>
<td>10 (Feb 26)</td>
<td>Introduction to counting processes and martingales</td>
</tr>
<tr>
<td>11 (Feb 28)</td>
<td>Key results for counting process martingales</td>
</tr>
<tr>
<td>12 (Mar 05)</td>
<td>Martingale application to logrank test and Cox model</td>
</tr>
<tr>
<td>(Mar 07)</td>
<td>MIDTERM REVIEW</td>
</tr>
<tr>
<td>(Mar 12)</td>
<td>MIDTERM TEST</td>
</tr>
<tr>
<td>(Mar 14)</td>
<td>NO CLASS</td>
</tr>
<tr>
<td></td>
<td>SPRING BREAK MARCH 19 and 21.</td>
</tr>
<tr>
<td>13 (Mar 26)</td>
<td>Martingale CLT application to Cox model, Nelson-Aalen estimator</td>
</tr>
<tr>
<td>14 (Mar 28)</td>
<td>Martingale CLT application to Cox model, Nelson-Aalen estimator</td>
</tr>
<tr>
<td>15 (Apr 02)</td>
<td>Confidence intervals and bands for Kaplan-Meier estimator</td>
</tr>
<tr>
<td>16 (Apr 04)</td>
<td>Simulating realizations of a stochastic process</td>
</tr>
<tr>
<td>17 (Apr 09)</td>
<td>Assessing fit of Cox model</td>
</tr>
</tbody>
</table>
18 (Apr 11)  Consequences of Mis-specified Cox model
19 (Apr 16)  Competing risks
20 (Apr 18)  Competing risks
21 (Apr 23)  Recurrent events
22 (Apr 25)  Multivariate survival times
23 (Apr 30)  Time dependent covariates and Surrogate markers
(May 02)     FINAL REVIEW
(May 07)     FINAL TEST
Meeting time:
Classroom:

Instructor:
Email:
Office:
Office phone:

TA:
Email:
Office:

Prerequisites:

Course description:

Learning objectives:

Competencies:

Course grade (A-E):
Lecture (Date)

1 (Jan 23)
2 (Jan 28)
3 (Jan 30)
4 (Feb 4)
5 (Feb 6)
6 (Feb 11)
7 (Feb 13)
8 (Feb 18)
 (Feb 20)
9 (Feb 25)
10 (Feb 27)
11 (Mar 4)
12 (Mar 6)
(Mar 11)
(Mar 13)
(Mar 18)
(Mar 20)
13 (Mar 25)
14 (Mar 27)
15 (Apr 1)
16 (Apr 3)
17 (Apr 8)
18 (Apr 10)
(Apr 15)
(Apr 17)
19 (Apr 22)
20 (Apr 24)
21 (Apr 29)
22 (May 1)

(May 6)

(May 8)
HSTA566: Calendar & Syllabus 2014

Tuesday and Thursday, 9:00-10:20
C3

Greg DiRienzo, Department of Epidemiology & Biostatistics
gdirienzo@albany.edu
SPH room 129
402-0394

Tom O'Grady, Department of Epidemiology and Biostatistics
togrady@albany.edu
GA/TA office room 144

Introductory mathematical statistics course (HSTA554), basic calculus (Calculus I and II) and matrix algebra

Introduction to the analysis of categorical data. Topics include rates, ratios and proportions, relative risk, Cochran Mantel Haenszel procedures, linear and log linear models for categorical data, maximum likelihood estimation and tests of hypotheses

To explain the underlying theory of categorical data methods, and to conduct data analyses using such methods using statistical software.

To analyze a dataset with categorical variables and explain the theoretical underpinnings that lead to choosing the appropriate analysis methodology.

30% Homework
- no late homework accepted
30% Midterm exam (in class written)
40% Final exam
- NO MAKEUP EXAMS GIVEN

"An Introduction to Categorical Data Analysis", by Alan Agresti
"Categorical Data Analysis", by Alan Agresti

May use any software; only SAS and R will be supported in lectures

https://ereserves.albany.edu/
All class material will be put here (lecture notes, homework assignments, etc).

Monday 10:00-12:00, Tuesday and Thursday 10:30-11:00
Tuesday and Thursday 10:30-11:00

As a courtesy to your fellow students and faculty, the use of cell phones (including text messaging) is not allowed during class time.
“Every student has the responsibility to become familiar with the standards of academic integrity at the University. Faculty members must specify in their syllabi information about academic integrity, and may refer students to this policy for more information. Nonetheless, student claims of ignorance, unintentional error, or personal or academic pressures cannot be excuses for violation of academic integrity. Students are responsible for familiarizing themselves with the standards and behaving accordingly, and UAlbany faculty are responsible for teaching, modeling and upholding them. Anything less undermines the worth and value of our intellectual work, and the reputation and credibility of the University at Albany degree.” (University’s Standards of Academic Integrity Policy, Fall 2013)

**Topics**

Relative risk vs. odds ratio

Likelihood function

Likelihood ratio test

Fisher's exact test

Normal approximation

Gamma coefficient

Numerical solutions

Conditional relationships

**NO CLASS**

Logistic, probit and other regression models

Multivariate normality

Logistic regression with no repetitions
ANOVA decomposition and logistic regression

Midterm review

Midterm

NO CLASS

NO CLASS

Odds ratios comparisons

ANOVA effects in series of 2 x 2 tables

Log-linear models

Mutual independence

Two-way interactions

Building models

NO CLASS

Lab with Tom

Higher order interactions

Polytomous logistic regression and proportional odds models

Poisson and Negative Binomial Regression
Final exam review

Final exam
Course number TBD: Protocol Development and Grant Writing
Fall, 2014: Thursdays: 1:00PM - 3:50PM
School of Public Health, East Campus, Room C5

Course Faculty:
Erin M. Bell, SPH Rm. 155, 402-0375, ebell@albany.edu

Prerequisites: This course is open to all DrPh and PhD students in the School of Public Health. Students must have completed their required core courses for their respective programs.

Office Hours:
By Appointment

Course Description:
This course is open to all DrPh and PhD students in the School of Public Health. This course will review methods for developing research proposals in the population sciences for submission for grant funding. The course will involve in-depth discussion of exposure and outcome assessment methods, study designs and bias assessment and how these factors influence the decision making process when developing a proposal. Application of these methods will be evaluated through the completion of written critiques of the peer-reviewed literature, in-class discussions and the preparation of a grant proposal as a culminating activity. Finally, given that the best way to assess whether you have mastered material is to teach the subject matter, each student is required to prepare one lecture based on a statistical, design or exposure/outcome assessment method relevant to their grant proposal.

Learning Objectives:
1. To understand the process for designing a research proposal.
2. To fully understand and discuss the impact of study design, outcome and exposure measurement and data collection on study bias and interpretation of results.
3. To be able to describe and defend the choice of research tools (e.g. study design, outcome and exposure assessment and statistical methods) for a particular research proposal.
4. Be familiar with the NIH process for writing and submitting research proposals. Be familiar with how other funding institutions may differ in their submission process.
5. Be familiar with the process for developing budgets and compliance protocols for a research study.
6. To know the guidelines for submitting research proposals at the University at Albany and how these may/may not differ at other institutions.
7. To develop a well-written research proposal for grant funding in the NIH format (note that NIH was chosen given the frequency the SPH faculty submit to NIH).
8. To develop and prepare a course lecture on a research method related to the proposal. Be able to design a proposal for an audience from multiple disciplines and address their needs within public health.
9. Be able to review and thoroughly discuss the methodological implications of studies described in peer-reviewed research manuscripts from multiple disciplines within public health.
Competencies (PhD):

Acquire advanced knowledge in the chosen field
Read, critically evaluate, and present scientific literature, including justifying the choice of methods applied to problems and the interpretation of results obtained
Demonstrate a command of the fundamentals and current state of the discipline sufficient to prepare a written research proposal
Develop problem solving skills through application of knowledge to a research problem in the chosen track
Read, critically evaluate, and present scientific literature, including justifying the choice of methods applied to problems and the interpretation of results obtained
Present and orally defend knowledge gained in a public seminar

Class Readings:
Articles and other readings will be assigned weekly and posted to the website. Please note, that readings and lecture topics may be adjusted slightly after grant proposal topics are chosen in order to accommodate and cover topics necessary for all subspecialties represented in class. Any adjustments will be thoroughly discussed in class and posted to the website.

Required Textbooks:

Suggested textbooks:

Web-site:
Lecture notes, assignments, and other course materials will be posted on the Blackboard Learning System course web-site. Students registered for the class can access the course material by logging on to http://bls.its.albany.edu/webct/entryPageIns.dowebct or through the MyUalbany link to Blackboard Learning System. Notes and readings will be posted as Adobe Acrobat files (i.e., with .pdf extensions).

Grading:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Class Lecture</td>
<td>25%</td>
</tr>
<tr>
<td>Draft Specific Aims</td>
<td>5%</td>
</tr>
<tr>
<td>Draft Innovation and Significance</td>
<td>5%</td>
</tr>
<tr>
<td>Grant Proposal</td>
<td>30%</td>
</tr>
<tr>
<td>Class Discussions</td>
<td>25%</td>
</tr>
</tbody>
</table>

For each day an assignment is late, 10 points will be deducted from the assignment grade.
Academic dishonesty (please refer to the *Community Rights and Responsibilities* booklet) will not be tolerated and will lead to disciplinary action as deemed appropriate by the faculty and/or the University's judicial process.

**Courtesy:**
As a courtesy to your fellow students and faculty, the use of cell phones (including text messaging) is not allowed during class time.

Finally, please respect your fellow students, faculty and guest lecturers by conducting yourselves in a professional manner. Up to 5% may be deducted from the final grade if the student is unable to comply with this request.

Total score for the class:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>95-100</td>
<td>A</td>
</tr>
<tr>
<td>90-94</td>
<td>A-</td>
</tr>
<tr>
<td>87-89</td>
<td>B+</td>
</tr>
<tr>
<td>84-86</td>
<td>B</td>
</tr>
<tr>
<td>80-83</td>
<td>B-</td>
</tr>
<tr>
<td>77-79</td>
<td>C+</td>
</tr>
<tr>
<td>74-76</td>
<td>C</td>
</tr>
<tr>
<td>70 or below</td>
<td>C-</td>
</tr>
</tbody>
</table>

**Homework:**
A two paragraph summary for each of the weekly article critiques will be due at the beginning of each lecture. Additional assignments will be announced in class.

**Class Discussions:**
Each student will be expected to lead two class discussions based on a recently peer-reviewed published article of their choice. The student will be assigned dates for his or her discussion the first day of class. Dr. Bell will lead the first discussion. Each student will provide copies of their article and questions to the class 1 week prior to their scheduled discussion date. All students will prepare typed responses to the questions for the assigned discussion date and hand in their responses at the end of the discussion. The class discussion grade will be based on both the student's discussion leadership as well as their preparation for (with their written answers) and their participation in discussions led by their fellow students.

**Grant Proposal:**
Each student will select, with the consent of faculty, a topic for a research grant proposal and must be approved by September 16. The Specific Aims draft for the grant proposal is due on September 30, the Significance and Innovation drafts are due October 14 and the project narrative draft is due on November 11. You will receive written feedback on all drafts. Instructions for the grant proposal are below and will be discussed further in class. The grant proposal is due on the last day of class (December 9). Students are encouraged to pick a topic that will lead to their dissertation or DrPh project, although this is not required.
**Lecture:**
The best way to assess whether you have mastered material is to teach the subject matter. Each student is required to prepare one lecture based on a topic relevant to their grant proposal. We will discuss lecture topics in class. Your lecture will be 30 minutes in length followed by a 15 minute question and answer period. The lectures are scheduled for December 2 and December 9. The lecture will be graded on organization, design and use of overheads or other visual aids, clarity, timeliness and response to questions.

**Instructions for Research Grant Proposal:**
The NIH guidelines for grant applications will be used as a template for the grant proposal. The student will be responsible for completing the following sections:

1. Project Summary/Abstract
2. Project narrative
3. Specific Aims
4. Research Strategy
   a. Significance
   b. Innovation
5. Approach
   a. Research Methods and Design
6. Bibliography and References Cited

Other sections of a traditional NIH grant (e.g. Budgets, biographical sketch etc.) are not required due to time limitations, however we will review these components in class. Additional instructions and guidelines for writing grant proposals will be provided in class.
August 26 - Class 1:
1. Overview of Course
2. Grant writing
3. Critical Review of Article
4. Assignments for article discussions

September 2- Class 2:
1. Article Discussion
2. Introduction to Exposure Assessment

Readings:
White, Armstrong and Saracci (WAS): Chapter 1 and 2
Gerin and Kapelewski (GK) (Chapter 1 and 2)

September 9 - Class 3:
1. Article Discussion
2. Questionnaire Development
3. Developing ideas and collaborations for grants

Readings:
WAS: Chapter 6
GK: Chapter 3 and 4

September 16 - Class 4: Topics Due
1. Article Discussion
2. Personnel Interviews and Existing records/diaries
3. Specific Aims, Significance and Innovation

Readings:
WAS: Chapter 7 and 8
GK: Chapter 5

September 23 - Class 5:
1. Article Discussion
2. Biomarkers

Readings:
WAS: Chapter 9

September 30 - Class 6: Specific Aims Due
1. Article Discussion
2. Environmental Exposure Assessment

Readings:
WAS: Chapter 10
October 7 - Class 7:
1. Article Discussion
2. Response Rates
3. Discuss Grant Drafts

Readings:
WAS: Chapter 11

October 14 - Class 8: Significance and Innovation Due

Research Foundation: Guest speakers
Tamar Sayer, Charlene Martel, Doris Romand
Writing Grant Proposals as a Graduate Student, overview, researching funding opportunities and developing budgets

Readings:
GK: Review Chapter 5 and 7

October 21 - Class 9:
1. Article Discussion
2. Exposure classification
3. Research Strategy

Readings:
WAS: Chapter 3

October 28 - Class 10:
1. Article Discussion
2. Discuss Significance and Innovation Drafts
3. Discuss Project narrative, Abstract and other components

Readings:
WAS: Chapter 4

November 4 - Class 11:
1. Article Discussion
2. Measurement Error
3. Validity and Reliability (Guest Speaker: Michael Bloom, PhD)

Readings:
WAS: Chapter 4 and 5

November 11 - Class 12: Draft Project Narrative due
1. Article Discussion
2. Ethics

Readings:
WAS: Chapter 12
GK: Chapter 6

**November 18 - Class 13:**
1. Article Discussion
2. Discuss Drafts and lectures

**November 25 - Class 14:**
1. Article Discussion
2. Answer final questions for proposal drafts and lectures

**December 2 - Class 15:**
Student Lectures

**December 9 - Class 16: Grant proposals due**
Student Lectures