

# Syllabus

## Epidemiology 750 Fall 2015

### Fundamentals of Public Health Surveillance

#### Overview

This course is designed to train students and public health professionals in the methods of public health surveillance. Not only will students be taught to apply concepts and methods covered in the course, but will also need to exercise critical judgment in preparation for confronting the complexities of real life.

#### Course Objectives

This course will provide the student with:

- Necessary background information related to public health surveillance
  - Information systems
  - Health indicators
- Training in types of public health surveillance systems
  - Infectious disease surveillance
  - Chronic disease surveillance
  - Occupational and environmental disease surveillance
  - Syndromic surveillance
- Training on how to evaluate the performance of a public health surveillance system
- Training on the basics of how to analyze and interpret data produced from public health surveillance systems
- Training on how to communicate information from public health surveillance systems

#### Teaching Methods

In a course such as this, the lecture method of teacher-centered expository discourse relegates students to the role of listeners who are not actively engaged in the learning process. Higher-level learning requires the student to become actively involved in applying concepts and methods to problems and to exercise critical judgment by attempting to reach a solution or draw conclusions when faced with a complex set of findings. These higher-level thinking skills will be continuously called upon in the cooperative learning classroom method, used throughout this course.

Cooperative learning is an instructional technique that brings students together in small, fixed groups to work on structured learning tasks. It enables all students to become more involved with the course material and to articulate their understanding of this material through problem-solving exercises with other members of their group. Students "who become involved in active discussion of their ideas with other students are more likely to have less irrelevant or distracting thoughts and spend more time synthesizing and integrating concepts than students who listen to lectures" (Bligh DA. What's the Use of Lectures. Penguin Press, 1992). Student-to-student

interaction is positively related to critical thinking outcomes and to study habits characterized by more active thinking and less rote memorization (Smith DG. College classroom interactions and critical thinking. J Educ Psych 1977;69:180-190.)

Based on these pedagogical principles, this course has been organized such that:

- All course materials are found on the Internet.
- Students will be assigned to small learning groups, typically eight to ten students per group. These learning groups will meet in our "virtual" classroom on the Internet.
- Evaluation of student performance is based on completing:
  - Course modules including case studies and quizzes (see schedule for due dates)
  - Two group projects (see schedule for due dates)
  - Midterm quiz and final project (see schedule for due dates)

**REMEMBER:** In most real-life problems, there is no one "right" answer but several different ways to address problems; some of these ways are more efficient, more constructive, and more long-lasting than others. An important lesson to learn from the experience of cooperative learning is that most solutions to community problems are more effective when the solution is reached by a team effort that actively engages all members of the team in addressing the problem and encourages creative thinking of the team in proposing a solution. This process converts learning from an individual to a social activity and draws on the collective wisdom of those attempting to reach a solution.

Because of the independent nature of this class, teams must learn to function largely independently using the lecture materials and the experience and knowledge of team members as their major resource to engage in each exercise. The best professional teams know how to use the resources of consultants, the literature, and the wisdom of the team to arrive at their own solutions. The point is, the faculty are not going to give you answers, but they are there to steer you, as a consultant would, on a path toward reaching your own team answers.

## Course Format

### Five Modules

The five modules are a combination of self-paced and/or group activities.

### Self-paced Activities

For each module you have a certain amount of time to complete the individual activities (lectures, readings, and case studies). This time varies per module but falls between two and four weeks. You can work at your own pace during that time to complete the activities. Please check the course schedule for due dates for all individual activities. The following lists the self-paced activities during this course:

- Lectures - Each module will have audio lectures.

- Readings - The required and suggested readings are either downloadable documents or URLs.
- Case studies for modules 1 - 4
- Module quizzes for all 5 modules
- Midterm quiz
- Final project

## Group Projects

There are two group projects during the semester. The group projects make use of group discussion forums. During the first group project that begins in Module 1 you have an opportunity to introduce yourself to your group in the "Introductions" discussion forum and do a team-building exercise. This forum is also a good place to discuss your schedules in regards to the group projects. The completed group project document is turned in to the faculty using the Assignment Tab in Sakai. Details about each project will be found in the module folder when it is made available.

## Midterm Quiz

Towards the middle of the course, there is a midterm quiz.

## Final Project

At the end of the course, there is a final project. *A required component of the final exam is that students must analyze a dataset using a statistical analysis program (SAS, SPSS, STAT or Excel).* These skills should include being able to calculate simple frequency distributions and proportions. If you are not familiar with these skills, you may wish to reconsider whether or not this course is a good fit for you. There will be no exemptions from the data analysis section of the final exam. Listed below is a link to a series of tutorials for Excel, if you need to refresh your skills.

<https://www.youtube.com/watch?v=qjqAJxwhfZY>

All individual assignments are governed by the UNC Honor Code.

## Course Resources

All course resources are located on the course Sakai website and include: ERIC Notebooks (basic epidemiology methods periodical), additional handouts and readings; links to journal articles or other readings on the Internet; instructions for case studies, individual assignments and project, and group projects.

## Course Policies and Expectations

### Time Commitment for this Course

The time commitment that will be involved for this course will, on average, require approximately **9 to 12 hours per week**. However, some weeks require more time than others, such as weeks coinciding with the midterm quiz and the final project. This Internet course requires at least the same time commitment from students as residential graduate level courses. You will be embarking on case studies, taking quizzes, working on multiple group projects (with group discussion forums), and completing a final project. These activities require time and thought, and we do not suggest waiting until the last minute to complete a module.

### **Adequate Computer Access and Working Email**

Please make sure that you have adequate computer and internet access. You should be checking the course Web site at least every other day or so. Email will also be sent frequently from Dr. Irwin, so please make sure that your inbox is not full. Note: If you haven't received email in more than a week, you should probably check your email to make sure it is working or not full. ***Lack of computer or internet access is not considered a viable reason for late assignments. Students are expected to manage their time to allow ample time for completion and submission of assignments.***

### **Computer Problems**

Because module activities and individual and group projects are many weeks in length, computer problems are **not** considered emergencies. If you're working on a project, be sure to save your work to a back-up CD, flash drive, or something equivalent so that you'll be able to submit it using another computer.

What should I do if something is wrong with my computer or the course software? Call 919-962-HELP 24 hours a day, seven days a week, for help with general computer problems. If the problem is course-specific email Lorraine\_Alexander@unc.edu. In the subject title of the email write "TECHNICAL HELP," and your problem will be addressed as soon as possible.

### **Minimum Technical Requirements**

Please read over the [minimum technical requirements](#) for this course. There is also a [Sakai Orientation](#) if you are not already familiar with Sakai.

### **Course Schedule**

Sometimes unexpected events occur (snow storms, power outages, etc.); we reserve the right to modify the syllabus. These modifications will be announced as quickly as possible so that students can adjust their schedules. The weekly course schedule is provided on the syllabus page in Sakai.

### **Due Dates, Late Penalties, and Grading**

## **Due Dates**

*Unless otherwise noted everything is due by 11:59pm Eastern time (ET) on the due date. No exceptions are made without prior approval of the course instructor.*

## **Case Study Grading**

Possible grades for each of the case studies include:

1 = case study is fully and satisfactorily completed

0.75 = case study is fully completed but some of the answers are not correct or lack the depth necessary to receive full credit

0 = case study is not completed by the due date (This includes partially completed case studies and case studies not turned in by the due date.)

You will receive the correct answers upon completion of your case study. The course faculty will look over the submitted answers from all the students and then send out one email to all students with a detailed discussion of common mistakes and problems. If, after reviewing this email, you still have any questions about the case study, please send an email to the course faculty.

## **Quiz Grading**

All quizzes are graded within Sakai when you submit your quiz. Penalties will be incurred for late submission of quizzes as outlined below:

Module Quiz late submission penalty:

- 10% of grade deduction per day late
- 3 days after the quiz due-date the quiz will be closed and no submissions will be accepted past this time.

Midterm Quiz late submission penalty:

- 10% of total points deducted per day late
- 3 days after the quiz due-date the quiz will be closed and no submissions will be accepted past this time.

Late submissions will not be allowed for the quiz component of the final exam.

## **Group Project Grading**

No late group projects will be accepted without a previously agreed-on extension from the course instructor. Out of consideration for your classmates and their grades, all group members should

contribute their best effort to assuring that the project is completed on time. Students who do not participate at all in the group discussion forum will not receive any group project points. Students who post to the discussion forum but do not make posts of substantial content may also receive a significant deduction in their group project score. Students who do not participate substantially may also receive poor peer evaluation scores.

***All group members are required to substantially contribute to each of the group project.***

Examples of substantial contribution include:

- The group member contributes to the group project assignment by acting as the project manager, content writer, editor or compiler.
- The group member posts quality discussion board comments that furthered progress of the assignment.

The following are ***not*** considered substantial contribution:

- The group member does not post to the discussion forum at all.
- The group member introduces themselves but does not contribute to the discussion forum or to the content of the assignment.
- The group member posted to discussion forum to let the group know he/she was busy and would join the group discussion at a later time but ends up not contributing either to the group discussion or to the content of the assignment.
- The group member posts on the discussion board such as ‘good job group’ or ‘I agree’ but does not further the progress of the assignment or contribute to the content of the assignment.
- The group member acts solely as the project submitter and does not contribute to the content of the assignment.

### **Grading Scale for the Course**

93 and above	H
70-92	P
60-69	L
Below 60	F

### **Evaluation of Student Performance**

Your grade in the course will be determined as a weighted average of your scores (after each is converted to a 0-100% scale) for the following activities:

- 25% for the final project
- 20% total for the 5 case studies
- 20% total for the 5 module quizzes

- 10% for the midterm quiz
- 25% for the two group projects
  - 6% for Person, Place, Event Mystery Group Project
  - 19% for TB Evaluation Group Project

Each group project grade will be based on 2 components. These include the deliverable(s), and the peer evaluation. Your peers will evaluate you on your contributions to the group project. If you fail to complete peer evaluations, your peer evaluation grade will be reduced by 20% for that group project.

### **Peer Evaluation Criteria**

At the end of each of the group projects, you will be required to complete and submit a peer evaluation for each of your group members (see the course schedule for dates to submit the peer evaluations). The purpose of the peer evaluation is to evaluate each of your group members on her/his performance as a group member in completing group assignments. The peer evaluation is completed once after each group project. ***Failure to complete peer evaluations will result in the loss of 20% from your peer evaluation grade for that group project.***

In the peer evaluation, you will be asked to rate individual group members on each of the following statements:

- This group member accomplished tasks on time.
- This group member's work reflected an acceptable level of thought and effort.
- This group member functioned as a valuable member of the group by supporting the efforts of fellow group members.

You will evaluate group members using the following:

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

In addition to the questions, the peer evaluation has an open-ended question in which you can write specific comments on the performance of each of your group members.

### **Course Assignment Formatting Requirements for Group Projects**

For all Word-based group projects, follow these formatting guidelines:

- Include your full name or your group's name in an obvious place in the document (e.g., on the first page).
- Use one-inch margins.
- Double-space the text.

- For the body, use 12-point or larger text in a standard font, such as Times New Roman. (Note that 10-point text may be used for footnotes, figure legends, etc.)

Where length requirements are included in the instructions, adhere to them strictly! Information written on pages that exceed the word limit will not be included in the grade. References and a title page are never included in the page limit.

## Withdrawing from the Course

If you decide to withdraw from the course at any time, you must notify:

- Dr. Debra Irwin
- The registrar for your program

## Course Drop, Withdrawal, and Incomplete Policies

If for some reason you cannot complete the course, there are three options:

### 1) Drop

Dropping the course needs to be done by the drop deadline designated by the graduate school, which you can get from the Registrar. Dropping by specific deadlines will allow you to get a portion of your tuition back.

### 2) Withdraw

Withdrawing from the course occurs after the drop deadline has passed but before the halfway point of the course. Again, contact the program registrar for specific deadlines.

### 3) Take an incomplete

To be eligible for an I (incomplete), you must have successfully completed at least 50 percent of the course. An incomplete will only be given if a student is unable to complete the semester due to illness or for acceptable personal reasons. Requests for an incomplete grade are considered on a case-by-case basis. The student is responsible for contacting the course instructor and asking for approval for the grade of I. Before the grade of I can be assigned, the student and the instructor must develop a plan for the completion of the required work. Students are only given extensions of time to complete assignments based on prior approval by the instructor. You will have a maximum of one year to complete the incomplete. If you fail to do so, the incomplete will automatically be converted to an F (fail).

For all options, you need to contact the lead instructor for the course and the director of the certificate program before the appropriate deadline.

**PLEASE NOTE:** If you miss the drop deadline and have completed less than 50 percent of course you are not eligible for an incomplete and you receive an F (fail) for the course.



## Honor System

As part of the UNC Honor Code, students pledge to maintain ideals of academic honesty, personal integrity, and responsible citizenship. Please review the [UNC Honor System](#) and make sure you understand and adhere to these policies in this course.

## Valuing, Recognizing, and Encouraging Diversity

This class will follow principles of inclusion, respect, tolerance, and acceptance that support the values of diversity.

## Miscellaneous

### Viewing recorded course webinars

The faculty uses Blackboard Collaborate to hold course meetings or give lectures. To view a recorded Live Meeting after the meeting is already over:

1. Click on the Blackboard Collaborate tab in Sakai
2. Click on the “Recordings” button
3. Click on the link of the title of the Live Meeting that you want to watch.
4. A small window will slide in on the right hand side of your screen. Click the “Play” button
5. A window will open telling you that have chosen to open “nativeplayback.collab”. Click “OK”.
6. The recorded Live Meeting will open in a new window.

### Online Privacy Statement-Please Read

1. By enrolling as a student in this course, you agree to abide by the University of North Carolina at Chapel Hill policies related to the Acceptable Use of online resources. Please consult the Acceptable Use Policy (<http://help.unc.edu/1672>) on topics such as copyright, net-etiquette and privacy protection.
2. As part of this course you may be asked to participate in online discussions or other online activities that may include personal information about you or other students in the course. Please be respectful of the rights and protection of other participants under the UNC Chapel Hill Information Security Policies ([http://its.unc.edu/ITS/about\\_its/its\\_policies/index.htm](http://its.unc.edu/ITS/about_its/its_policies/index.htm)) when participating in online classes.
3. When using online resources offered by organizations not affiliated with UNC Chapel Hill, such as Google or You Tube, please note that the Terms and Conditions of these companies and not the University’s Terms and Conditions apply. These third parties may offer different degrees of privacy protection and access rights to online content. You should be well aware of this when posting content to sites not managed by UNC Chapel Hill.

4. When links to sites outside of the unc.edu domain are inserted in class discussions, please be mindful that clicking on sites not affiliated with UNC-Chapel Hill may pose a risk for your computer due to the possible presence of malware on such sites.

## UNC Department of Epidemiology Fundamentals of Public Health Surveillance Course Schedule, Fall 2015






*indicates individual assignments that are turned in.  
The dates indicate when the individual assignments are due.*


### Module 1: Population Health: Assessment, Indicators, and Measures August 18 to September 8

8/18	Tuesday	<b>EPID 750 Course Launches</b>	
8/20	Thursday	<b>LiveMeeting: Course Introduction and Welcome</b> <i>Debra Irwin, PhD, MSPH, will host this online LiveMeeting from <b>Noon to approximately 12:30pm Eastern</b>. Come learn about the course topics and meet the faculty.</i>	
		<b>Lectures</b> 1. Introduction to Public Health Surveillance 2. Population Health Information Overview 3. Population Health and Community Health Assessment 4. Population Health Indicators and Summary Measures	
		<b>Required Readings</b> 1. History of Public Health Surveillance 2. Disease Surveillance at the State and Local Levels 3. Public Health Surveillance 4. Surveillance: The Sentinel Health Event Approach	
8/18	Tuesday	<b>Group Project Begins (Icebreaker)</b> <i>Note that this group project begins in module 1 but is due during module 2.</i>	
8/31	Monday	<b>Part I of Group Project (Icebreaker) Due</b> <input type="checkbox"/> <i>Introduce yourself on the discussion forum. Get to know your group's other members. Part 2 of the Group Project will not be due until Module 2.</i>	
9/8	Tuesday	<b>Case Studies Due</b> Overview of Public Health Surveillance <input type="checkbox"/>  Submit your case studies via the Assignments tab in Sakai.	
9/8	Tuesday	<b>Module 1 Quiz Due</b> <input type="checkbox"/> Take and submit the quiz via the Tests & Quizzes tab in Sakai.	

**Module 2: Information Systems**  
**September 8 to September 29**



		<b>Lectures</b> <ol style="list-style-type: none"> <li>Information Systems Overview</li> <li>Types of Health Information Systems in the United States</li> <li>Evaluating Public Health Surveillance Systems</li> <li>Overview and Evaluation of NC DETECT: Syndromic Surveillance in North Carolina</li> </ol>
		<b>Required Readings</b> <ol style="list-style-type: none"> <li>Updated Guidelines for Evaluating Public Health Surveillance Systems</li> <li>Framework for Evaluating Public Health Surveillance Systems for Early Detection of Outbreaks</li> <li>Public Health Surveillance Systems</li> </ol>
9/11	Friday	<b>Part 2 Group Project (Person, Place and Event Mystery) Due</b> <i>Your team should have agreed on a group name by now and completed this group project. One person from your group should submit your group project via the Assignments tab in Sakai.</i>
9/14	Monday	<b>Group Project Peer Evaluations Due</b> <input type="checkbox"/>  <i>The online evaluation form will be available in Sakai after 1:00 am Eastern on Thursday September 10.. Link for Peer Evaluation form can be found in the Module 1 Group Project folder.</i>
9/28	Monday	<b>Case Studies Due</b> <input type="checkbox"/>  <ol style="list-style-type: none"> <li>Canadian Criteria for Surveillance <input type="checkbox"/></li> </ol> <p>Submit your case studies via the Assignments tab in Sakai.</p>
9/28	Monday	<b>Module 2 Quiz Due</b> <input type="checkbox"/>  Take and submit the quiz via the Tests & Quizzes tab in Sakai.

**Midterm Quiz**  
**October 1 to October 23**




10/23	Friday	<b>Midterm Quiz (Evaluating a Surveillance System) Due</b> <input type="checkbox"/>  <i>The quiz will be available in Sakai after 1:00 am Eastern on Thursday, October 1. Take and submit the quiz via the Tests &amp; Quizzes tab in Sakai.</i>
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**Fall Break: October 14 - October 18**

**Module 3: Types of Surveillance**  
**September 30 to October 20**


10/6		<p><b>Group Project Begins</b> (Evaluation of the WHO / International Union Against Tuberculosis and Lung Disease (IUATLD) Global Project on Drug Resistance Surveillance)  <i>Note that this group project begins in module 3 but is due in module 4.</i></p>
		<p><b>Lectures</b></p> <ol style="list-style-type: none"> <li>1. Chronic Disease Surveillance</li> <li>2. Occupational and Environmental Surveillance</li> <li>3. Infectious Disease Surveillance</li> </ol>
		<p><b>Required Readings</b></p> <ol style="list-style-type: none"> <li>1. National Surveillance of Vaccine-Preventable Diseases</li> <li>2. Surveillance for Silicosis, 1993—Illinois, Michigan, New Jersey, North Carolina, Ohio, Texas, and Wisconsin</li> <li>3. Surveillance of Occupational Illness and Injury</li> <li>4. Chronic Disease Surveillance</li> <li>5. Challenges to Global Surveillance and Response to Infectious Disease Outbreaks of International Importance</li> </ol> <p><b>Recommended Readings</b></p> <ol style="list-style-type: none"> <li>1. Introduction: <i>ERIC Notebook Series on Cancer</i></li> <li>2. Measuring Cancer: Cancer Registries and Cancer Surveillance</li> <li>2. Cancer Statistics: Cancer Incidence and Mortality Estimates</li> </ol>
10/19	Monday	<p><b>Case Studies Due</b></p> <ol style="list-style-type: none"> <li>1. Variables from Surveillance Systems <input type="checkbox"/></li> </ol> <p>Submit your case studies via the Assignments tab in Sakai.</p> 
10/19	Monday	<p><b>Module 3 Quiz Due</b> <input type="checkbox"/></p> <p>Take and submit the quiz via the Tests &amp; Quizzes tab in Sakai.</p> 

**Module 4: Analysis and Communication of Results**  
**October 20 to November 10**


		<b>Lectures</b> <ol style="list-style-type: none"> <li>1. Data Analysis and Interpretation I</li> <li>2. Data Analysis and Interpretation II</li> <li>3. Communicating Information for Action</li> <li>4. Federal Public Health Surveillance and Analysis of Surveillance Data</li> <li>5. Surveillance Systems: Using and Presenting Surveillance Data</li> </ol>
		<b>Required Readings</b> <ol style="list-style-type: none"> <li>1. Emerging Infectious Diseases: Review of State and Federal Disease Surveillance Efforts</li> <li>2. Surveillance of Acquired Immunodeficiency Syndrome (AIDS)</li> </ol>
11/3	Tuesday	<b>Group Project Due</b> (Evaluation of the WHO / International Union Against Tuberculosis and Lung Disease (IUATLD) Global Project on Drug Resistance Surveillance) <i>This group project began in module 3. One person from your group should submit your group project via the Assignments tab in Sakai.</i>
11/5	Thursday	<b>Group Project Peer Evaluations Due</b> <input type="checkbox"/>  <i>(Evaluation of the WHO / International Union Against Tuberculosis and Lung Disease (IUATLD))</i> <i>The online evaluation form will be available in Sakai after 1:00 am Eastern on Monday, November 2. Link for Peer Evaluation form can be found in the Module 1 Group Project folder.</i>
11/9	Monday	<b>Case Studies Due</b>  <ol style="list-style-type: none"> <li>1. Chlamydia <input type="checkbox"/></li> <li>2. Global HIV/AIDS</li> </ol> <p>Submit your case studies via the Assignments tab in Sakai.</p>
11/9	Monday	<b>Module 4 Quiz Due</b> <input type="checkbox"/>  Take and submit the quiz via the Tests & Quizzes tab in Sakai.

**Thanksgiving Break: November 25 to November 29**

**Module 5: Special Topics in Surveillance**  
**November 10 to November 24**

		<p><b>Lectures</b></p> <ol style="list-style-type: none"> <li>1. Syndromic Surveillance in North Carolina</li> <li>2. An Introduction to Geographic Information Systems (GIS)</li> <li>3. Infectious Disease Surveillance and Outbreak Investigation Using Geographic Information Systems (GIS)</li> <li>4. Using NC DETECT for Surveillance of Influenza-Like Illness and Influenza</li> <li>5. Comparison of Global Health Surveillance Systems</li> </ol>
		<p><b>Required Readings</b></p> <ol style="list-style-type: none"> <li>1. System Descriptions: New York City Syndromic Surveillance Systems</li> <li>2. North Carolina Disease Event Tracking and Epidemiologic Collection Tool (NC DETECT)</li> <li>3. Castillo-Salgado. Trends and Directions of Global Public Health Surveillance. <i>Epidemiologic Reviews</i>. 2010. 32.</li> <li>4. Mapping for Surveillance and Outbreak Investigation</li> <li>5. Rapid Needs Assessments and GIS</li> </ol>
11/23	Monday	<p><b>Module 5 Quiz Due</b> <input type="checkbox"/></p> <p>Take and submit the quiz via the Tests &amp; Quizzes tab in Sakai. </p>
		<p><b>No Group Project Activities for this Module</b></p>
		<p><b>No Case Studies for this Module</b></p>

**Final Project**  
**November 10 to December 2**

12/2	Wednesday	<p><b>Final Project Due</b> <input type="checkbox"/></p> <p><i>Please note that this project requires significant effort and constitutes a major portion of your grade. Begin work well before the due date to ensure you have adequate time to complete the project. The materials for the project will be available on Sakai after 1:00 am Eastern on Tuesday, November 10. Complete and submit the final project via the Tests &amp; Quizzes tab on Sakai.</i> </p>
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