Fall 8-1-2018

EPID 7233– Public Health Surveillance Methods

Jian Zhang
Georgia Southern University, jianzhang@georgiasouthern.edu

Follow this and additional works at: https://digitalcommons.georgiasouthern.edu/coph-syllabi

Part of the Public Health Commons

Recommended Citation
https://digitalcommons.georgiasouthern.edu/coph-syllabi/326

This other is brought to you for free and open access by the Public Health, Jiann-Ping Hsu College of at Digital Commons@Georgia Southern. It has been accepted for inclusion in Public Health, Jiann-Ping Hsu College of - Syllabi by an authorized administrator of Digital Commons@Georgia Southern. For more information, please contact digitalcommons@georgiasouthern.edu.
Prerequisites: PUBH6133 or equivalent or permission of instructor.

FOLIO Access: https://my.georgiasouthern.edu/portal/portal.php

Access to course materials are available for up to one year after graduation.

Catalog Description
This course will provide students with a strong foundation in public health surveillance of both health conditions and risk factors. The course will teach the theory and practice of surveillance supported by many examples of surveillance systems from the developed and developing world. The class will build on and reinforce basic epidemiologic concepts. Students will be given the opportunity to design and evaluate a surveillance system.

Required Textbook:
Supplemental reading materials, chapters from other books or publications appearing in major journals, will be provided by the instructor and accessible online at the course website or distributed during class.
MPH Core Student Learning Outcomes

1. Select quantitative and qualitative data collection methods appropriate for a given public health context.
2. Analyze and interpret data for public health research, policy, or practice.
3. Assess population needs, assets, and capacities that affect communities’ health.
4. Design a population-based policy, program, project or intervention.
5. Communicate audience-appropriate public health content, both in writing and through oral presentation.

CEPH Concentration Competencies

1. Apply the terminology and definitions of epidemiology to a variety of settings appropriately.
2. Calculate epidemiologic measures using statistical software, as appropriate.
3. Draw appropriate inferences from epidemiologic data.
4. Evaluate the strengths and limitations of epidemiologic reports.
5. Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.

CEPH MPH Competencies

Evidence-based Approaches to Public Health
1. Apply epidemiological methods to the breadth of settings and situations in public health practice.
2. Select quantitative and qualitative data collection methods appropriate for a given public health context.
3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate.
4. Interpret results of data analysis for public health research, policy or practice.

Public Health & Health Care Systems
5. Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings.
6. Discuss the means by which structural bias, social inequities and racism undermine health and create challenges to achieving health equity at organizational, community and societal levels.

Planning & Management to Promote Health
7. Assess population needs, assets and capacities that affect communities’ health.
8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs.
9. Design a population-based policy, program, project or intervention.
10. Explain basic principles and tools of budget and resource management.
11. Select methods to evaluate public health programs.
Policy in Public Health
12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence
13. Propose strategies to identify stakeholders and build coalitions and partnerships for influencing public health outcomes
14. Advocate for political, social or economic policies and programs that will improve health in diverse populations
15. Evaluate policies for their impact on public health and health equity

Leadership
16. Apply principles of leadership, governance and management, which include creating a vision, empowering others, fostering collaboration and guiding decision making
17. Apply negotiation and mediation skills to address organizational or community challenges

Communication
18. Select communication strategies for different audiences and sectors
19. Communicate audience-appropriate public health content, both in writing and through oral presentation
20. Describe the importance of cultural competence in communicating public health content

Interprofessional Practice
21. Perform effectively on interprofessional teams

Systems Thinking
22. Apply systems thinking tools to a public health issue

Course objectives:

Upon completion of this course, the student will be able to:

1. Get the necessary background information related to public health surveillance
2. Identify the basic public health surveillance systems functioning locally, regionally, nationally and globally.
3. Define the basic steps to establish a surveillance system for different types of public health issues.
4. Analyze and interpret data produced from public health surveillance systems.
5. Understand the difference of surveillance functionality at different level of public health system.
6. Evaluate the performance of a public health surveillance system.
7. Appreciate the challenges and opportunities created by technology advancement for public health surveillance.
8. Communicate information from public health surveillance systems effectively and efficiently with professionals and general publics as well.
Performance-Based Objectives Linked to Course Activities (Note: Activities Described in Next Section)

1. Students will demonstrate competence in the basic terminology associated with public health surveillance. (Activity 1)
2. Students will demonstrate the ability to integrate basic concepts of surveillance (Activity 2)
3. Students will demonstrate the ability to communicate surveillance concepts through writing to lay audiences. (Activity 3)
4. Students will demonstrate the ability to communicate public health surveillance concepts through writing to professional audiences. (Activity 3, 4)
5. Students will demonstrate the ability to communicate public health surveillance concepts through presentation to lay and professional audiences. (Activity 4)

Assessment of Student Learning

1. Activity 1: Use course lectures and class discussions to explain the basic terminology and definitions of public health surveillance, including, but not limited to, disease surveillance, epidemiology surveillance, zero reporting. Competence in basic terminology will be evaluated using final examine and pop quizzes.

2. Activity 2: Capability to explain the basic application of public health surveillance principles, and to integrate these principles across the public health spectrum will be evaluated using in-class discussion on selected topics.

3. Activity 3: Competence in written communication to the professional audience will be evaluated using the final publishable submission of the class project based on real-world research project.

4. Activity 4: Competence in oral presentation will be evaluated using the preparation and delivery of a PowerPoint presentation of a comprehensive review of an assigned infectious/chronic disease surveillance projects.
# Outline of Course Content

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPIC ASSIGNMENT</th>
<th>READING (NOTE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  08/14</td>
<td>Warm-up and Courses review</td>
<td><strong>Assignment 1:</strong> Read and outline class projects from previous class cohort</td>
</tr>
<tr>
<td>2  08/21</td>
<td>Introduction to Surveillance Systems <em>(Topic for group project will be provided)</em> <em>(Outline of previous class project due=2/100)</em></td>
<td>Ch1: Historical Development <em>JAMA Pediatr.</em> 2018;172(8):782-784 <em>(Assignment 1 due)</em></td>
</tr>
<tr>
<td>3  08/28</td>
<td>The Past of Public Health Surveillance <em>(Topic selection finalized)</em></td>
<td>Ch2: Considerations in Planning a Surveillance System</td>
</tr>
<tr>
<td>4  09/04</td>
<td>Purpose of Public Health Surveillance <em>(Literature search)</em></td>
<td>Ch3: Sources of Health-Related Information <em>JAMA</em> 2017; 317 (9), 971-973</td>
</tr>
<tr>
<td>5  09/11</td>
<td>Scheme and Method of Surveillance <em>(Literature search)</em></td>
<td>Ch 4, 10, 11</td>
</tr>
<tr>
<td>10 10/16</td>
<td>Evaluation of Public Health Surveillance <em>(Results of class project ready for review)</em></td>
<td>Ch8: Evaluating Public Health Surveillance</td>
</tr>
<tr>
<td>12 10/30</td>
<td>Class project presentation <em>(Class presentation as a group=8/100)</em> <em>(Discussion of class project ready for review)</em></td>
<td><em>MMWR</em> 2001 Oct 19;50(41):893-897</td>
</tr>
<tr>
<td>13 11/06</td>
<td>Future of Public Health Surveillance Social Media and Public Health Surveillance <em>(1st draft of your group project)</em></td>
<td>Cha 12, and 13</td>
</tr>
<tr>
<td>14 11/13</td>
<td>Specific topic: Surveillance for disease eradication <em>(Finalized submission of group project=40/100)</em> *</td>
<td>Zhang J (1997) <em>J of infectious Disease;</em> 175:s122-34 <em>(Class project due)</em></td>
</tr>
<tr>
<td>BREAK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 11/27</td>
<td>Specific topic: Diabetes Surveillance</td>
<td>Students’ publication on surveillance (TBA)</td>
</tr>
<tr>
<td>17 12/04</td>
<td>Course Wrap-Up and Final Examination <em>(Final exam = 20/100)</em></td>
<td></td>
</tr>
</tbody>
</table>
* We will emphasize the quality of the final version of your literature review in evaluations, but some consideration will also be given to the amount of progress made over the course of the semester.

**Portfolio Inclusion**
Samples of your work may be reproduced for search purposes and/or inclusion in the professor’s teaching portfolio. You have the right to review anything selected for use, and subsequently ask for its removal.

**Instructional Methods:**
Class meetings will be a combination of lecture, class discussion, and active participation. Computer-generated presentations will be used in the lecture portion of this course. Prior to each lecture, the student is encouraged to complete the recommended readings and to thoughtfully answer the study questions for that learning experience. This active learning exercise is intended to assist the student in prioritizing and focusing their attention to the more salient points of the material found in the supportive readings. In this way it is hoped that the learner will be better prepared to successfully accomplish the learning objective of each lecture experience.

**Assignment (project-warm up):**
There are two purposes for the class assignment one. (1) As a part of the training of your writing skills and (2) to help you to get more sense about what your final submission of class project looks like.

**Pop quiz:**
Occasionally, the instructor will ask you to complete a pop quiz on the materials covered in previous class lectures before he starts the class lecture. The answer sheets of the pop quizzes will be submitted anonymously. However, you are encouraged to submit it with your name on if you are confident about your quiz performance. The quiz will not be accounted towards your course scores, it is likely if your performance is consistently poor that instructor’s impression may go negatively against you.

**Class project:**
The primary aims of the class project are to provide class participants with experience in application of the concepts and methods of surveillance effectively and efficiently. The ultimate goal of this project is to prepare students to apply appropriate methods and software in the analysis of surveillance data and to effectively communicate the results of their analysis in the form of papers, technical reports or others forms of scientific communication. To this end, the project will require each group to (1) present their findings, its policy implication, clinical relevance and limitation of the study in the class, and (2) develop a final paper based on an independent analysis of data set. The instructors will be available throughout the course to assist students in each successive phase of the development of the project paper.

**Final exams:**
Students will complete one take-home exam, addressing basic concepts of surveillance systems, and applying the principles and methods discussed in the class to evaluate an existing surveillance system.

Grading:

<table>
<thead>
<tr>
<th>Component / deliverable items</th>
<th>Due time (week)</th>
<th>% of grade *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outline of previous class project</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Literature search (table)</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Literature review (Project mini-review)</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Project Power-point</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>Project presentation</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Final of class project (In the format of publishable manuscript, rubric would be available)</td>
<td>14</td>
<td>40</td>
</tr>
<tr>
<td>• Importance (10 points)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Methodology (10 points)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Results (5 points)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Lessons learned/ policy or practice implications (5 points)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Clarity (5 points)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Abstract (5 points)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class participation,</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>• Class attendance (5 points)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Discussion participation (5 points) **</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final exam (take home?)</td>
<td>17</td>
<td>20</td>
</tr>
</tbody>
</table>

*: One point would be taken away from the group for every one week delay.

**: Your performance on pop quizzes may be reflected by the points instructor is going to grant you on discussion participation.

90 – 100 A 80 – 89 B 70 – 79 C
60 – 69 D Below 60 F

Your grades will not be posted. All exams and assignments will be graded and returned promptly so that students may accurately calculate their grades at any point in time during the semester.

All your work needs to be produced in a professional manner. The typos, grammar errors should be kept at minimum if any. The format and readability of your submissions will be taken into consideration when the instructor grades. At the present time, only MS word files are acceptable.

All assignments should be received by 12:00PM of the due day by electronic submission to jianzhang@georgiasouthern.edu. You must receive a confirmation of receipt to assume these have been well received by instructor for the final grade. You are responsible for these
submissions and if the files are not received in a readable format, hard-copies are due at the same
time in my mailbox located in the Western wing of Cone Hall. So attempt early submission.

There are times when extraordinary circumstances occur (e.g., serious illness, death in the
family, etc.). In such circumstances, and/or if you need additional time to satisfactorily complete
any course requirement, please consult with the instructor within a reasonable amount of time.

*** Technological difficulties do NOT constitute legitimate excuses or emergencies***

Extensions are not guaranteed and will be granted solely at the discretion of the instructor.
NO EXTRA CREDIT PROJECTS WILL BE ASSIGNED!

General Expectations

1. For every one-credit hour, you should expect to work roughly two hours outside the
classroom each week. For example, for a three credit hour course, during a regular fifteen
week semester, you should expect approximately ninety hours of work outside of class.

2. Students are expected to keep up with the class, to read the required material, and to submit
assignments and activities by due dates and times.

3. Students are expected to independently complete all activities, exercises, assignments, and
assessments including exams.

4. Students are expected to produce quality work. Typos and grammar errors should be kept to a
minimum. The format and readability of submissions will be taken into consideration when
assigning a grade.

5. Remember to check when assignments are due. It is recommended that you stay ahead of
schedule on the assignments, so if an emergency happens, your assignment will be completed
and ready to submit within the designated time frame. It is your responsibility to keep track
of the due dates for each assignment.

Response Times

During a normal work week (i.e., Monday 9:00 AM through Friday 5:00 PM) students can
expect responses as follows:

- Email: within 48 hours
- Discussion posts: within 72 hours
- Assignment grades: within 72 hours of submission date.

Exceptions: I may not check FOLIO or GSU email over the weekends. If you send me an email
after 5:00 PM on Friday, please do not expect a response until the following Monday.

All assignments will be graded promptly so that students may accurately calculate their grades at
any point in time during the semester. There are times when extraordinary circumstances occur
In such circumstances, and/or if you need additional time to satisfactorily complete any course requirement, please consult with the instructor within a reasonable amount of time. Extensions are not guaranteed and will be granted solely at the discretion of the instructor.

**Course Expectations**

**Texting and Use of Cell Phones (and Other Technologies)**

Please do not text in class or use your cell phone during class! Texting during class (or in a meeting) is disruptive and rude…at least to me. My preference is that you put cell phones away during class meetings so they are not a source of temptation. Offenders will be asked to leave.

**Class Attendance and Participation Policy**

Federal regulations require attendance be verified prior to distribution of financial aid allotments. Regular attendance is expected. Your attendance will be verified at the first regular class session.

It is the policy of the University to permit students, faculty, and staff to observe those holidays set aside by their chosen religious faith. The faculty should be sensitive to the observance of these holidays so that students who choose to observe these holidays are not seriously disadvantaged. It is the responsibility of those who wish to be absent to make arrangements in advance with their instructors.

Students participating in authorized activities as an official representative of the University (i.e., athletic events, delegate to regional or national meetings or conferences, participation in university-sponsored performances, and JPHCOPH funded) will not receive academic penalties and, in consultation with the instructor of record, will be given reasonable opportunities to complete assignments and exams or given compensatory assignment(s) if needed. The student must provide written confirmation from a faculty or staff advisor to the course instructor(s) at least 10 days prior to the date for which the student will be absent from the class. The student is responsible for all material presented in class and for all announcements and assignments. When possible, students are expected to complete these assignments before their absences. In the event of a disagreement regarding this policy, an appeal may be made by either the student or the instructor of record to the corresponding college dean. (University Graduate Catalog)

**Academic Misconduct**

As a student registered at this University, it is expected that you will adhere to only the strictest standards of conduct. It is recommended that you review the latest edition of the Student Conduct Code book, as well as the latest Undergraduate & Graduate Catalog to familiarize yourself with the University’s policies in this regard. Your continued enrollment in this course is an implied contract between you and the instructor on this issue; from this point forward, it is assumed that you will conduct yourself appropriately.
Plagiarism

According to the Academic Dishonesty Policy of Georgia Southern University, Plagiarism includes (but is not limited to):

A. Directly quoting the words of others without using quotation marks or indented format to identify them.
B. Using published or unpublished sources of information without identifying them.
C. Paraphrasing material or ideas without identifying the source.
D. Unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic material.

If you are accused of plagiarism by a JPHCOPH, the following policy, as per the Judicial Affairs website: (http://students.georgiasouthern.edu/judicial/faculty.htm) will be enforced:

PROCEDURES FOR ADJUDICATING ACADEMIC DISHONESTY CASES

First Offense - In Violation Plea
1. If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, the professor should contact the Office of Judicial Affairs to determine if this is a first violation of academic dishonesty. The incident will be reported via the following website: http://students.georgiasouthern.edu/judicial/faculty.htm
2. If it is a first violation, the professor should talk with the student about the violation. If the student accepts responsibility in writing and the professor decides to adjudicate the case, the following procedures will be followed:
   a. The student will be placed on disciplinary probation for a minimum of one semester by the Office of Judicial Affairs.
   b. The student will be subject to any academic sanctions imposed by the professor (from receiving a 0 on the assignment to receiving a failing grade in the class).
   c. A copy of all the material involved in the case (Academic Dishonesty Report Form and the Request for Instructor to Adjudicate Form) and a brief statement from the professor concerning the facts of the case and the course syllabus should be mailed to the Office of Judicial Affairs for inclusion in the student’s discipline record.

First Offense - Not In Violation Plea (student does not admit the violation)
If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, the professor should contact the Office of Judicial Affairs to determine if this is the first or second violation of academic dishonesty. The student will be charged with academic dishonesty and the University Judicial Board or a University Hearing Officer would hear the case. If the student is found responsible, the following penalty will normally be imposed:
   a. The student will be placed on Disciplinary Probation for a minimum of one semester by the Office of Judicial Affairs.
   b. The student will be subject to any academic sanctions imposed by the professor.

Second Violation of Academic Dishonesty
If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, and if it is determined this is the second violation, the student will be
charged with academic dishonesty and the University Judicial Board or a University Hearing Officer would hear the case.

If the student is found responsible, the following penalty will normally be imposed:
   a. Suspension for a minimum of one semester or expulsion.
   b. The student will be subject to any academic sanctions imposed by the professor.

NOT RESPONSIBLE FINDING
When a student is found not responsible of academic dishonesty, the work in question (assignment, paper, test, etc.) would be forwarded to the Department Chair. It is the responsibility of the Chair to ensure that the work is evaluated by a faculty member other than the individual who brought the charge and, if necessary, submit a final grade to the Registrar. For the protection of the faculty member and the student, the work in question should not be referred back to the faculty member who charged the student with academic dishonesty.
In the case of a Department Chair bringing charges against a student, an administrator at the Dean’s level will ensure that the student’s work is evaluated in an appropriate manner.

CONFIDENTIALITY
In accordance with provisions of the Family Educational Rights and Privacy Act of 1974 and the Georgia Open Records Act, any information related to a violation of academic dishonesty or the outcome of a judicial hearing regarding academic dishonesty, is prohibited and must be treated as confidential by members of the faculty.

Disability-related Accommodations
Georgia Southern University is committed to providing reasonable accommodations to students with documented disabilities as required under federal law. Disabilities may include ADD or AD/HD, autism spectrum disorder, brain injury, chronic medical conditions, communication disorders, hearing loss, learning disabilities, mobility impairment, psychological disorders, visual impairment or temporary injuries. The purpose of disability accommodation is to provide equal access to the academic material and equal access to demonstrate mastery of the material. If you have a disability and need accommodations, please contact the Student Accessibility Resource Center (SARC). You will need to meet with a SARC staff member who can help you gather documentation of your disability or refer you to an appropriate resource for assessment. Once documentation of the disability is approved, SARC staff will provide you with an accommodation letter detailing the approved accommodations which you should present to me so we can discuss and implement your accommodations. Disability accommodations work best starting at the beginning of the semester, but can be approved and started at any point in the semester. Accommodations start at the time the accommodation letter is presented to faculty within reasonable timelines; accommodations are not given retroactively. SARC on the Statesboro campus is located on the second floor of Cone Hall and the phone number is (912) 478-1566. SARC for Savannah and Liberty campuses is located on the second floor of Memorial College Center and the phone number is (912) 344-2572.

University Calendar for the Semester
The University Calendar is located with the semester schedule, and can be found at:
http://em.georgiasouthern.edu/registrar/resources/calendars/
**One Final Note**

The contents of this syllabus are as complete and accurate as possible. The instructor reserves the right to make any changes necessary to the syllabus and course material to ensure better student learning. The instructor will announce any such changes in class. It is the responsibility of the student to know what changes have been made in order to successfully complete the requirements of the course.

This syllabus, my lecture notes, and all materials distributed and presented during this course are protected by copyright law. You are authorized to take notes in this class but that authorization extends to only making one set of notes for your personal use and no other use. You are not authorized to sell, license, commercially publish, distribute, transmit, display, or record notes from this class unless you have my written consent to do so.

**STUDENT CONDUCT CODE**

The Student Conduct Code is the official University publication governing student conduct and behavior. It is the responsibility of each student to become familiar with the rules and regulations governing student life. Student conduct procedures, appeal procedures, and disciplinary sanctions are found in the Student Conduct Code at [http://students.georgiasouthern.edu/conduct](http://students.georgiasouthern.edu/conduct).

I acknowledge that I have read and understand this statement referencing the Student Conduct Code.

**ACADEMIC DISHONESTY**

The University goal is to foster an intellectual atmosphere that produces educated, literate people. Because cheating and plagiarism are at odds with that goal, they shall not be tolerated in any form. Students are expected to adhere to the rules and regulations as set forth in the Student Conduct Code. Therefore, all work submitted by a student must represent that student's own ideas and effort; when the work does not, the student has engaged in academic dishonesty.

Plagiarism occurs when a person passes in another person's work as his or her own, borrows directly from another person's work without proper documentation, and resubmits his or her own work that has been previously submitted without explicit approval from the instructor. For example, academic dishonesty occurs whenever a student participates in any of the following: Cheating submitting material that is not yours as part of your course performance; using information or devices that are not allowed by the faculty; obtaining and/or using unauthorized materials; fabricating information, research, and/or results; violating procedures prescribed to protect the integrity of an assignment, test, or other evaluation; collaborating with others on assignments without the faculty's consent; cooperating with and/or helping another student to cheat; demonstrating any other forms of dishonest behavior. Plagiarism directly quoting the words of others without using quotation marks or indented format to identify them; using sources of information (published or unpublished) without identifying them; paraphrasing materials or ideas without identifying the source; self-plagiarism - resubmitting work previously submitted without explicit approval from the instructor; unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic material.

NOTICE: The list above is intended only to provide general guidelines for recognizing and avoiding common types of academic dishonesty. It is in no way an exhaustive or comprehensive list of all the types of academic dishonesty. For more information about academic honesty, see
the Student Conduct Code at http://students.georgiasouthern.edu/conduct. I acknowledge that I have read and understand the Academic Dishonesty Policy.

I have read the syllabus and understand the contents and course requirements.

________________________  ______________________  ______________________
Student Name (print)       Student Signature         Date