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Fall 2017

# EPID 7135A - Epidemiology of Infectious Disease

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# Georgia Southern University Jiann-Ping Hsu College of Public Health

EPID 7135-A – Epidemiology of Infectious Disease Fall 2017

| Instructor:          | Isaac Chun Hai Fung, Ph.D.  |
|----------------------|---|
| Office:              | Hendricks Hall, Room 2029   |
| Phone:               | (912) 478-5079  |
| E-Mail Address:      | cfung@georgiasouthern.edu   |
| <b>Office Hours:</b> | Tuesday 3.30pm – 5.30pm; Thursday 9.30am – 12.30pm.                   |
|                      | Appointments are highly recommended. Priority will always be given to |
|                      | individuals who made appointments by emails beforehand.               |
| <u>Class Meets</u> : | Tuesday & Thursday – 2:00PM to 3:15PM (Info Technology Bldg 2205)     |

Course Catalog available at: <u>http://em.georgiasouthern.edu/registrar/resources/catalogs/</u> under Jiann-Ping Hsu College of Public Health Programs

This syllabus is correct as of August 6, 2017. Scheduling of classes and details of assignments and examinations may be subject to change. You are asked to visit FOLIO to double check if I have updated the syllabus, especially the scheduling of classes.

Prerequisites: PUBH 6541, PUBH 6533 or equivalent or permission from the instructor.

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

# **Catalog Description**

This course is designed to provide students with an overview of the principles and practices of infectious diseases epidemiology with focus on how the presence and control of communicable diseases affects public health locally, nationally and internationally. Topics to be covered include: 1) general principles of infectious diseases epidemiology, including outbreak investigation, surveillance, analysis of infectious diseases data, and laboratory testing of specimens; 2) major modes of infectious disease transmission, including airborne, food and water, zoonotic, insect vector, blood, and sexual transmission; 3) different control strategies for infectious diseases, including infection control, antimicrobial management, immunization, risk factor modification, and screening; 4) the practical application of epidemiologic tools for the understanding and control of infectious diseases.

#### **Recommended Textbook:**

Nelson, K. E., and Masters Williams, C. (2013). *Infectious Disease Epidemiology: Theory and Practice. 3rd Edition.* New York: Jones & Bartlett. ISBN-13: 978-1449683795.

# MPH Core Student Learning Outcomes (CORE)

- 1. Demonstrate proficiency and effectiveness in the communication of core public health principles and practices, both oral and written.
- 2. Demonstrate proficiency in the integration of the core public health disciplines (Biostatistics, Epidemiology, Environmental Health, Health Policy/Management, and Social/Behavioral Science) in practice and research.
- 3. Demonstrate proficiency in problem solving, critical thinking, and public health leadership.

# MPH Epidemiology Student Learning Outcomes (EPID)

- 1. Formulate population-based hypotheses and develop appropriate research designs to test these hypotheses.
- 2. Collect, analyze, and interpret data derived from population-based research.
- 3. Create and implement public health surveillance systems for population-based studies.
- 4. Recommend evidence-based interventions and control measures in response to epidemiologic findings.
- 5. Communicate epidemiologic principles and concepts to lay and professional audiences through both oral and written communication.

# MPH Core Competencies in Epidemiology

Upon graduation, a student with an MPH degree should be able to:

- 1. Describe a public health problem in terms of magnitude, person, and time in rural and urban settings.
- 2. Analyze data from epidemiologic investigations, studies, and surveillance, with special emphasis on the identification of health disparities and promotion of health equity.
- 3. Apply principles of causation to make judgments about causal inference from epidemiologic data.
- 4. Apply the principles and limitations of public health screening programs.
- 5. Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.
- 6. Apply basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data.
- 7. Explain the basic terminology and definitions of epidemiology.
- 8. Identify the role of laboratory resources in epidemiologic activities.
- 9. Explain how determinants of health affect public health practice.
- 10. Communicate epidemiologic information to lay and professional audiences.
- 11. Identify the strengths and limitations of epidemiologic research findings.
- 12. Explain the different uses of basic study designs and selection of variables used in public health.

# <u>Performance-Based Objectives Linked to Course Activities (Note: Activities Described in Next Section)</u>

1. Students will synthesize biological, epidemiological, medical, mathematical and statistical information about infectious diseases for public health purposes. (Activity 1)

- 2. Students will demonstrate competence in the ability to perform calculations related to infectious disease epidemiology, e.g. vaccine efficacy, and to acquire a quantitative understanding of the transmission dynamics of infectious diseases. (Activity 2)
- 3. Students will demonstrate the ability to integrate knowledge of infectious disease epidemiology and public health policy, and to communicate public health policies and their rationale to a professional or lay audience. (Activity 3)
- 4. Students will demonstrate the ability to create and to lead participants in a hypothetical outbreak investigation scenario. (Activity 4)
- 5. Students will demonstrate the ability of comprehension of scientific writing and of presenting scientific findings in a professional setting. (Activity 5)

# Assessment of Student Learning

Assessment Activity 1: Use course lectures and class discussions to explain epidemiology of infectious diseases. Competence in the knowledge of this discipline will be evaluated using two exams.

Assessment Activity 2: Use in-class activities, both worksheet-based and computer-based, to instruct the quantitative aspects of epidemiology of infectious diseases. Participation in the inclass activities will be counted towards the final grade.

Assessment Activity 3: A scenario will be created to instruct students how to write a policy brief. Competence in the ability of policy brief will be evaluated through an assignment of writing a policy brief.

Assessment Activity 4: Students will be asked to create a hypothetical scenario of food poisoning outbreak and will lead that scenario in a class of first-year MPH students. Students will be instructed the basics of outbreak investigation and the writing of outbreak investigation report. Competence in this ability will be evaluated through an assignment of creating an outbreak investigation scenario for a class of first-year MPH students.

| Week/<br>Date      | Activities In Class   | PowerPoint Reading & Assignments<br>(You are recommended to read them prior to<br>class)   |
|--------------------|---|--|
| Wk 1<br>Aug 15 (T) | Guest lecture 1. Special topic on<br>neglected tropical diseases – Prof.<br>Marina Eremeeva, MD, PhD, ScD   | [Dr. Fung will be out of town to attend a conference.]<br>2017 NCHCMM – Aug 15-17, 2017  |
| Aug 17<br>(Th)     | Guest lecture 2. Environmental<br>exposure to pathogens and toxins –<br>Prof. Atin Adhikari, PhD  | [Dr. Fung will be out of town to attend a conference.]<br>2017 NCHCMM – Aug 15-17, 2017  |
| Module 1 F         | mergency Responses & Outbreak Investig  | ation  |
| Wk 2<br>Aug 22 (T) | Explanation of course requirements.   | <b>PowerPoint.</b> Infectious Disease Epidemiology: an overview  |
|                    | Activity 1. Responses to an outbreak.<br>SARS in Toronto.<br>Class discussion.  | <b>PowerPoint.</b> Emergency response 1: Severe Acute<br>Respiratory Syndrome (SARS)   |
|                    | May and Schabas (2011). <b>The Toronto</b><br>Severe Acute Respiratory Syndrome II<br>Experience. In Hunting and Gleason<br>(ed.) <i>Essential Case Studies in Public</i><br><i>Health</i> (New York: Jones & Bartlett<br>Learning, 2011)   | Recommended readings:<br><u>Nelson and Masters Williams</u> : Chapter 5. Outbreak<br>Epidemiology.<br><u>Nelson and Masters Williams</u> , pp. 346-351. SARS.  |
| Aug 24<br>(Th)     | Guest lecture 3. Evaluation of Two Surveillance Methods of Unplanned School Closure in<br>Michigan, 2015-16 – Ashley Jackson, MPH & Lindsay Mullican, MPH   |  |
| Wk 3<br>Aug 29 (T) | Activity 2. CDC Ebola Response. Class<br>discussion.<br>Bell BP et al. (2016) Overview, Control<br>Strategies, and Lessons Learned in the<br>CDC Response to the 2014-2016- Ebola<br>Epidemic. MMWR. 65(Suppl. 3): 4-11.                    | PowerPoint. Emergency response 2: Ebola  |
| Aug 31<br>(Th)     | Lecture with PowerPoint   | PowerPoint. How to write a policy brief<br>Assignment 1. Policy brief. To be submitted by<br>12pm on Sep 6 (Wed)   |
|                    | Activity 3. How would you conduct an<br>outbreak investigation? The Example<br>of Ebola – Southern Sudan, 1976.<br>Worksheet.<br>WHO/International Study Team (1978)<br>Ebola haemorrhagic fever in Sudan,<br>1976. Bull WHO 56(2):247-270. | <ul> <li>Optional readings:</li> <li>1) Ebola Vaccine Study in Sierra Leone, 2014 – 16.</li> <li>Widdowson M-A et al. (2016) Implementing an Ebola Vaccine Study – Sierra Leone. MMWR 65 (Suppl 3): 98 – 106</li> <li>2) Modeling Task Force, CDC Ebola Emergency Response, 2014 – 16.</li> <li>Meltzer MI et al. (2016) Modeling in Real Time during the Ebola Response. MMWR 65 (Suppl 3): 85-89.</li> </ul> |

# **Overview of the content to be covered in Fall 2017** (subject to potential changes)\*

| Wk 4                      | Lecture with PowerPoint  | PowerPoint. Vaccine: an introduction  |
|---------------------------|--|---|
| Sep 5 (T)                 | Activity 4. Vaccine efficacy.<br>Worksheets x3   | <b>Recommended readings:</b><br><u>Nelson and Masters Williams:</u><br>Chapter 11. Vaccines: Past, Present, and Future.     |
| Module 3. In              | fluonzo  |   |
| Sep 7 (Th)                | Lecture with PowerPoint  | <b>PowerPoint.</b> Influenza: part (1)  |
|                           |  | <b>PowerPoint.</b> Influenza: part (2)  |
|                           |  | <b>Recommended readings:</b><br><u>Nelson and Masters Williams:</u><br>Chapter 15. Epidemiology and Prevention of Influenza |
| Module 4. Ti              | ransmission Dynamics   |   |
| Wk 5<br>Sep 12 (T)        | Lecture with PowerPoint  | <b>PowerPoint.</b> Introduction to basic dynamic models of infectious disease transmission                                  |
| Sep 14 (Th)               | Activity 5. Understanding an influenza<br>model<br>Worksheet.<br>Wong et al., Clin. Infect. Dis. 2013<br>57(Suppl 1):S16.  | <b>Recommended readings:</b><br><u>Nelson and Masters Williams</u> : Chapter 6. Infectious<br>Disease Dynamics.             |
| Wk 6<br>Sep 19 (T)        | Guest lecture. – Dr. Gerardo Chowell<br>(Georgia State University)   |   |
| Sep 21 (Th)               | Activity 6 (Part 1) Basic dynamic<br>models of infectious disease<br>transmission: an Excel-based computer<br>model<br>Computer practical with Excel.<br>NOTES: Bring your own laptop<br>computer to class | <b>Recommended readings:</b><br>Garnett et al. Lancet 2011 378:515.   |
| Wk 7<br>Sep 26 (T)        | Activity 6 (Part 2) Basic dynamic<br>models of infectious disease<br>transmission: an Excel-based computer<br>model<br>Computer practical with Excel.<br>NOTES: Bring your own laptop<br>computer to class |   |
| Sep 28 (Th)               | Guest lecture – Dr. Jessica Schwind<br>One Health: An Introduction   |   |
| Sep 29 (F)<br>– Oct 6 (F) | Exam 1. (Take home exam)<br>Covers Modules 1 – 4   | Exam 1. Submit it to FOLIO by 11.59pm, Oct 5, 2016 (W)  |

| Wk 8   | Activity 7. Class discussion.  | PowerPoint. Water, sanitation and hygiene: an  |
|--|--|--|
| Oct 3 (T)  |  | introduction   |
|  | Group 1) Cholera outbreak in   |  |
|  | Portugal.  | Reference readings:  |
|  | Paul A. Blake, "Cholera for a Dime"  | Fung and Cairneross. Int J Env Health Res 2007.  |
|  | In Mark S. Dworkin (ed.) Cases in Field  | 17(3):161-183.   |
|  | Epidemiology: A Global Perspective.  | Cairncross et al. Int J Epidemiol 2010. 39(S1):i193-<br>i205.  |
|  | Chapter 4  | Clasen et al. Cochrane Database of Systematic  |
|  | Group 2) Cryptosporidium outbreak in   | Reviews 2010. Issue 6.   |
|  | Milwaukee.   | Keviews 2010. Issue 0.   |
|  | Jeffrey P. Davis, "The Massive   | PowerPoint. Diarrheal diseases: an introduction  |
|  | Waterborne Outbreak of Cryptosporidium   |  |
|  | Infections, Milwaukee, Wisconsin, 1993"  | Recommended reading:   |
|  | In Mark S. Dworkin (ed.) Cases in Field  | Nelson and Masters Williams:   |
|  | Epidemiology: A Global Perspective.  | Chapter 20. Diarrheal Diseases   |
|  | Chapter 14   |  |
|  | -  | PowerPoint. Cholera, Typhoid & Cryptosporidium   |
| Oct 5 (Th)   | Activity 8. Data Interpretation Activity   |  |
|  | (to be confirmed)  | PowerPoint. Helminth infection: an introduction  |
|  | And/or   | Recommended reading:   |
|  | Lecture with PowerPoint  | Nelson and Masters Williams:   |
|  |  | Chapter 28. Epidemiology of Helminth Infections  |
| Oct 6 (F)  | Exam   | 1 Deadline:11.59pm   |
| 11.11 0  |  | -  |
| Wk 9   | Activity 9. Data Interpretation Activity   |  |
| Wk 9<br>Oct 10 (T)                                       | Activity 9. Data Interpretation Activity<br>(to be confirmed)  |  |
|  |  |  |
| Oct 10 (T)   | (to be confirmed)  |  |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases  | <b>PowerPoint.</b> Vectorborne diseases: an introduction   |
| Oct 10 (T)   | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers   | <b>PowerPoint.</b> Vectorborne diseases: an introduction<br><b>PowerPoint.</b> Malaria   |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases  |  |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea  |  |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea  | PowerPoint. Malaria  |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)  | PowerPoint. Malaria<br>Recommended reading:  |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological   | <b>PowerPoint.</b> Malaria<br><b>Recommended reading:</b><br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases. |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among  | <b>PowerPoint.</b> Malaria<br><b>Recommended reading:</b><br><u>Nelson and Masters Williams</u> :  |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal   | PowerPoint. Malaria<br>Recommended reading:<br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases.               |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of  | PowerPoint. Malaria<br>Recommended reading:<br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases.               |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of<br>the disease's transmission in French  | <b>PowerPoint.</b> Malaria<br><b>Recommended reading:</b><br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases. |
| Oct 10 (T)<br>Module 6. V                                | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of  | <b>PowerPoint.</b> Malaria<br><b>Recommended reading:</b><br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases. |
| Oct 10 (T)<br>Module 6. V<br>Oct 12 (Th)                 | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of<br>the disease's transmission in French<br>Guiana. Malaria Journal, 15:35.   | PowerPoint. Malaria<br>Recommended reading:<br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases.               |
| Oct 10 (T)<br><u>Module 6. V</u><br>Oct 12 (Th)<br>Wk 10 | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of<br>the disease's transmission in French<br>Guiana. Malaria Journal, 15:35.<br>Activity 11. Chikungunya on Reunion  | PowerPoint. Malaria<br>Recommended reading:<br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases.               |
| Oct 10 (T)<br>Module 6. V<br>Oct 12 (Th)                 | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of<br>the disease's transmission in French<br>Guiana. Malaria Journal, 15:35.<br>Activity 11. Chikungunya on Reunion<br>Island.   | PowerPoint. Malaria<br>Recommended reading:<br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases.               |
| Oct 10 (T)<br><u>Module 6. V</u><br>Oct 12 (Th)<br>Wk 10 | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of<br>the disease's transmission in French<br>Guiana. Malaria Journal, 15:35.<br>Activity 11. Chikungunya on Reunion  | PowerPoint. Malaria<br>Recommended reading:<br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases.               |
| Oct 10 (T)<br><u>Module 6. V</u><br>Oct 12 (Th)<br>Wk 10 | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of<br>the disease's transmission in French<br>Guiana. Malaria Journal, 15:35.<br>Activity 11. Chikungunya on Reunion<br>Island.<br>Data Interpretation Worksheet.   | <b>PowerPoint.</b> Malaria<br><b>Recommended reading:</b><br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases. |
| Oct 10 (T)<br>Module 6. V<br>Oct 12 (Th)<br>Wk 10        | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of<br>the disease's transmission in French<br>Guiana. Malaria Journal, 15:35.<br>Activity 11. Chikungunya on Reunion<br>Island.<br>Data Interpretation Worksheet.<br>Reference readings:  | <b>PowerPoint.</b> Malaria<br><b>Recommended reading:</b><br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases. |
| Oct 10 (T)<br>Module 6. V<br>Oct 12 (Th)<br>Wk 10        | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of<br>the disease's transmission in French<br>Guiana. Malaria Journal, 15:35.<br>Activity 11. Chikungunya on Reunion<br>Island.<br>Data Interpretation Worksheet.   | <b>PowerPoint.</b> Malaria<br><b>Recommended reading:</b><br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases. |
| Oct 10 (T)<br>Module 6. V<br>Oct 12 (Th)<br>Wk 10        | (to be confirmed)<br>ector-borne diseases<br>Activity 10. Malaria among soldiers<br>deployed in French Guinea<br>Data Interpretation Worksheet.<br>Reference reading:<br>Pommier de Santi V et al. (2016)<br>Epidemiological and entomological<br>studies of a malaria outbreak among<br>French armed forces deployed at illegal<br>gold mining sites reveal new aspects of<br>the disease's transmission in French<br>Guiana. Malaria Journal, 15:35.<br>Activity 11. Chikungunya on Reunion<br>Island.<br>Data Interpretation Worksheet.<br>Reference readings:<br>Renault et al. (2007) AJTMH, 77(4):727- | <b>PowerPoint.</b> Malaria<br><b>Recommended reading:</b><br><u>Nelson and Masters Williams</u> :<br>Chapter 25. Emerging Vector-borne Diseases. |

| Oct 19 (Th)         | Lecture with PowerPoint   | <b>PowerPoint.</b> Zika virus   |
|---------------------|---|---|
|                     | Activity 12. Zika virus outbreak on<br>Yap Island.<br>Data Interpretation Worksheet.  |   |
|                     | <b>Reference readings:</b><br>Duffy MR et al. (2009) <b>Zika Virus</b><br><b>Outbreak on Yap Island, Federated</b><br><b>States of Micronesia.</b> New England<br>Journal of Medicine. 360(24):2536-2543  |   |
| Module 7. Se        | exually transmitted diseases  |   |
| Wk 11<br>Oct 24 (T) | Activity 13. Class discussion.<br>Group 1) Syphilis and the early days of<br>digital epidemiology<br>Jeffrey D. Klausner, "Tracking a Syphilis<br>Outbreak Through Cyberspace" In Mark<br>S. Dworkin (ed.) Cases in Field<br>Epidemiology: A Global Perspective.<br>Chapter 16.   | PowerPoint. Sexually transmitted diseases: an introduction         PowerPoint. Viral hepatitis: an introduction         PowerPoint. HIV         Recommended reading:         Nelson and Masters Williams:         Chapter 23. Viral Hepatitis.         Chapter 24. Sexually Transmitted Diseases. |
|                     | <b>Group 2) The early days of the HIV</b><br><b>epidemics in the US.</b><br>Harold W. Jaffe, "The Early Days of<br>AIDS in the United States: A Personal<br>Perspective" In Mark S. Dworkin (ed.)<br>Cases in Field Epidemiology: A Global<br>Perspective. Chapter 7.   | <b>Recommended reading:</b><br><u>Nelson and Masters Williams</u> :<br>Chapter 22. Human Immunodeficiency Virus<br>Infections and the Acquired Immunodeficiency<br>Syndrome   |
| Oct 26 (Th)         | Activity 14. Estimated numbers of HIV<br>infections<br>Data Interpretation Worksheet.<br>Reading: Safren et al. (2016) Frequency<br>and predictors of estimated HIV<br>transmissions and bacterial STI<br>acquisition among HIV-positive patients<br>in HIV care across three continents.<br>Journal of the International AIDS<br>Society. 19:21096.            |   |
| Wk 12<br>Oct 31 (T) | Activity 15. Cluster Randomized<br>Controlled Trial of Social Media<br>Intervention (tentative)<br>Data Interpretation Worksheet.<br>Reading: Young SD, et al. (2015) The<br>HOPE Social Media Intervention for<br>Global HIV Prevention: A Cluster<br>Randomized Controlled Trial in Peru.<br>Lancet HIV; 2(1): e27-e32.<br>doi:10.1016/S2352-3018(14)00006-X. |   |

| Module 8: F                             | ood poisoning investigation exercise   |  |
|---|--|--|
| Nov 2 (Th)                              | Activity 16. Food poisoning<br>investigation exercise.<br>Part 1: Creating the scenario<br>Students work in groups   | An example of a food poisoning outbreak<br>investigation:<br>Parry A, Fearnley E, Denehy E. 'Surprise': Outbreak of<br>Campylobacter infection associated with chicken liver<br>pâté at a surprise birthday party, Adelaide, Australia,<br>2012. Western Pacific Surveillance and Response<br>Journal, 2012, 3(4):16–19.<br>URL:<br>http://ojs.wpro.who.int/ojs/index.php/wpsar/article/vie<br>w/168/187 |
| Nov 3 (F)                               | Exam 2 (Take home exam)  | Exam 2. Submit to FOLIO by 11.59pm, Nov 10 (F)   |
| Wk 13<br>Nov 7 (T)<br>Nov 9 (Th)        | CLASSES CANCELLED<br>[Dr. Fung will be out of town to attend a conference.]<br>APHA (Nov 4-8)<br>ASTMH (Nov 5-9)<br>Students are encouraged to attend APHA annual meeting to be held in Atlanta. |  |
| Nov 10 (F)                              | Exam 2 Deadline: 11.59pm   |  |
| Wk 14<br>Nov 14 (T)                     | Activity 16. Food poisoning<br>investigation exercise.<br>Part 2: Presenting the scenario in class<br>(Group A & B) (Deliverable #1)   | Submit Activity 16 Deliverable #2<br>Written submission (i.e., all materials ready for<br>classroom delivery)<br>by 11.59pm, Nov 13 (M)  |
| Nov 16<br>(Th)                          | Activity 16. Food poisoning<br>investigation exercise.<br>Part 2: Presenting the scenario in class<br>(Group C & D) (Deliverable #1)   |  |
| Wk 15<br>Nov 21-23                      | Thanksgiving - NO CLASS  |  |
| Wk 16<br>Nov 28 (T)<br>11am-<br>12.15pm | Activity 16. Food poisoning<br>investigation exercise.<br>Part 3: Delivering the scenario in<br>PUBH 6533-A (Dr Logan Cowan)   | Activity 16 Deliverable #3.<br>Enact the scenario in PUBH 6533<br>Note: The best group scenario will be chosen to be<br>delivered to a class of first-year MPH students in<br>PUBH 6533 Epidemiology. However, all EPID 7135<br>students have to be presented. Attendance will be<br>taken.  |
| Nov 30<br>(Th)                          | Lecture. Digital Epidemiology: An<br>Introduction  | To be confirmed (This slot is reserved in case there<br>is any cancellation of class due to weather or family<br>emergency)  |
| Wk 17<br>Dec 5-7                        |  | NO CLASS   |

#### \*Please refer to the most updated version of this syllabus in your FOLIO folder

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 lectures, class discussion, and active participation in practicals. Prior to each lecture, the student is encouraged to complete the recommended readings. Students are encouraged to <u>actively participate</u> in practicals. In this way, it is hoped that the learner will be better prepared to successfully accomplish the learning objectives of the course experience.

# Grading:

# Exams:

There are two take-home, open-book examinations:

- 1. September 29 October 6, 2017
- 2. November 3 10, 2017

Examination papers will be made available via FOLIO at 12.01am on the first day of the examination period. Students are expected to submit the examination papers electronically to the FOLIO dropbox by the specified time of the last day of the examination period.

# Practical participation:

Learning is an interactive, dynamic process. Practicals are designed to help you practice the skills and knowledge that you acquired in lectures. Attendance at the practicals is required. Your participation of the practicals will be evaluated.

# Policy Brief:

Policy briefs are brief summary submitted to policy-makers by technical staff to advise them on issues related to public health policies. This is usually not longer than 2 pages of Letter size paper. All students are required to write a policy brief.

# Food Poisoning Investigation Scenario (Group Project):

An assignment of creating a scenario of a hypothetical food poisoning investigation for first-year MPH students will be offered. Students are required to work together as a team.

The class will be divided into 4 groups (assuming a class size of around 25 people).

Deliverable #1. All groups have to be present their scenario in the class (PowerPoint presentation). They will be graded by the Instructor.

Deliverable #2. All groups have to submit all written materials to be used in the activity in PUBH 6533 Epidemiology course. Students have to submit all the materials pertinent to the practical by the prescribed deadline. The outbreak scenario written submission should include the scenario (the overall story line), the answer key to the scenario (with the attack rate calculation), the story for each participant (including the food items that they ate), and etc. as instructed by the Instructor. The written submission will be graded by the Instructor.

Deliverable #3. The best scenario will be chosen to be delivered by EPID 7135 students to the first-year MPH students who will participate the scenario as a class-room practical in PUBH 6533 Epidemiology course. All students of EPID 7135 should participate in the practical during the allotted date and time. Attendance will be taken.

| Assignment  | %    |
|---|------|
| Exam 1  | 20   |
| Exam 2  | 20   |
| In-class Activity (participation points)              | 15   |
| Policy Brief  | 10   |
| Food Poisoning Investigation Scenario (Group project) |      |
| Deliverable #1: Presentation                          | 10   |
| Deliverable #2: Written Submission                    | 20   |
| Deliverable #3: Enact Scenario in PUBH 6533           | 5    |
| Bonus points at the discretion of the Instructor      | (10) |
| Total   | 100  |

| Percent   | Grade |
|-----------|-------|
| 90 - 100% | А     |
| 80 - 89%  | В     |
| 70 - 79%  | С     |
| 60 - 69%  | D     |
| 0 - 59%   | F     |

<u>Late submission (excluding exams)</u>: Reduction of 5% for every 24 hours. For example, for an assignment that is due on Wednesday at 6pm, if someone submits it on the coming Friday at 5.59pm, then: Adjusted Points = Points \* 90%

All exams and assignments will be graded and posted 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.

There are times when extraordinary circumstances occur (e.g., serious illness, death in the family, etc.). In such circumstances, 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.

#### **Expectations**

While learning Epidemiology will involve a considerable amount of mathematical calculations, Epidemiology is not just numbers. Understanding what the numbers you calculate *mean* and how

they are interpreted is critical to your success in this course and as a public health professional. The presentation of your answers in a clear and concise manner is an expectation for all exams and assignments. In other words, your answer should have meaning when separated from the work leading up to the final answer. Additionally, when you are asked for an interpretation of an answer, you are expected to provide an interpretation relevant to the context of the problem.

As some calculations in this course will require multiple steps leading to a final number, it is strongly suggested that you carry <u>FIVE</u> decimal places after the decimal throughout the calculation. Rounding may affect your answer significantly and is often a source of confusion. This is never a good thing. Once you get to the final step, round to one/two decimal places depending on the magnitude of the association reported.

If you have ANY questions about how to report your results, write out your answers, carry decimal places, round off answers, select a constant, or anything else relevant to turning in assignments, ask me *before* turning in the assignment to avoid losing points.

# 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. The same rule applies to updating / checking Facebook, Twitter, WhatsApp, or any other social media. I advise all students to 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. However, attendance will not officially be recorded after the first class period.

# 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.

# <u>Plagiarism:</u>

"According to the Academic Dishonesty Policy of GSU, 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 (<u>http://students.georgiasouthern.edu/judicial/faculty.htm</u>) 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: <u>http://students.georgiasouthern.edu/judicial/faculty.htm</u>

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."

#### **University Calendar for the Semester**

The University Calendar is located with the semester schedule, and can be found at: <a href="http://em.georgiasouthern.edu/registrar/">http://em.georgiasouthern.edu/registrar/</a>

#### **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.

#### **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. 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.