EPIB 330 – The Coming Plague: Public Health Perspectives (3 Credits)

Semester: Fall 2015
Classroom and Time: SG III 3219
T 9:00 – 11:50 AM
9/1/15 – 12/15/15
Instructor: Graciela Jaschek, PhD, MPH
Office Hours: by Appointment
Office: TBA
Phone: 301-405-3575
Email: gjaschek@umd.edu

COURSE PRE-REQUISITES
Students who intend to take EPIB330 must have completed the BSCI202 with a grade of C- or better as a pre-requisite.

COURSE INFORMATION

Required Texts and Other Readings

Required:
All book chapters and reports can be downloaded from the internet and some will be available in pdf format through CANVAS. You are not required to buy or rent books.

This is a list of all the books and reports we will use in class. Some you will find in CANVAS in pdf format:

Merrill* - Merrill R.M. Introduction to Epidemiology. Jones and Bartlett Learning, Burlington, MA (2013)
Recommended:
The coming plague: newly emerging diseases in a world out of balance / Laurie Garrett (1995)

Additional Materials Required
We will be using Socrative free software during class time to assess your progress. This will require the use of your Smartphone or laptop in class.

Socrative: During the Orientation in Week 1 we will go over the registration and use of Socrative. For more information about getting a free Socrative account, please go to http://socrative.com/.
Calculator: A basic calculator will be needed for some classroom exercises

Additional Websites and Other Resources:
Demographic information:
U.S. Census Bureau: http://www.census.gov/#

Demographic and health information:
IndexMundi: http://www.indexmundi.com/

Health information:
World Health Organization (WHO): http://www.who.int/en/
Centers for Disease Control and prevention: http://www.cdc.gov/
CDC FoodNet: http://www.cdc.gov/foodnet/

Health maps:
Health Map: http://healthmap.org/en/
Pro-Med: http://healthmap.org/promed/
Vaccine Preventable Diseases:
http://www.cfr.org/interactives/GH_Vaccine_Map/#/intro

Web of causation:
The Brain: http://www.thebrain.com/
COURSE DESCRIPTION, GOALS, AND EXPECTATIONS

Course Description
Disease control and prevention is fundamental to the health of local, national, and global populations. Infectious agents are constantly adapting and breaching our defenses. Factors related to society, the environment, and our increasing global interconnectedness increase the likelihood of disease emergence and spread. Vaccines and antibiotics, demographic changes and urbanization, climate change and natural disasters, international travel and commerce, poverty and war create conditions for infectious diseases to spread. So how do we design and execute solutions to public health threats? How do research, policies, interventions, and budgets affect public health systems?

Course Learning Objectives
Upon completing this course, students will be able to:

1) Outline current understanding of epidemiology and reliability of epidemiological data in the historical context
2) Describe the basic infectious disease process
3) Identify and explain basic epidemiologic measures and terminology
4) Analyze epidemiological data and determine causes of outbreaks
5) Describe the spectrum of microbes and potential human pathogens
6) Identify and describe what are the social determinants of disease
7) Analyze case studies to determine what social determinants may be contributing to human disease outcomes
8) Apply basic knowledge of pathogens and epidemiologic measures to solve public health challenges.

Program Competencies Addressed in this Course
This course addresses the core competencies in epidemiology at the University of Maryland College Park, School of Public Health:

1. Identify and describe core scientific concepts underlying disease prevention.
2. Identify and define public health problems from an ecological and interdisciplinary perspective.
3. Synthesize scientific knowledge to formulate solutions to public health problems.

COURSE REQUIREMENTS

Class Participation
Students are expected to complete class readings prior to class, attend class regularly, and participate in class discussions to master the material. As a courtesy to your instructor and classmates, please notify the instructor in advance through CANVAS if you are unable to attend class.

In the event that the University is closed for an emergency or extended period of time, students will still be expected to read all the materials, and instruction will proceed online. During classroom time, students will be asked to participate in class by logging-in into elms to answer the daily quiz questions, and will be required to complete their class assignments online.

So as to not distract you and your classmates from our class activities, please limit the use of laptops/netbooks/smartphones/ereaders/communication devices to legitimate classroom purposes (e.g., taking notes, downloading class information from ELMS /Canvas, working on an in-class exercise).

During assessments and the final exam, use of laptops, netbooks, smartphones, ereaders, or other communication devices is prohibited.

**Homework**
Students will be responsible for reading all assigned materials including book chapters, journal articles, and/or PowerPoint slides before coming to class. Students will be asked to download their completed study guides into Canvas by midnight the day before class. The study guides include three to four short questions based on the assigned readings. The last question in the study guide will ask you to share what was the most difficult concept to understand or a personal story that illustrates the readings.

There will be clicker exercises during each class based on the readings.

**Case Studies and Directed Discussions**
This is an active learning class using several techniques that are student-centered. Students will be provided with case studies or directed discussions and will be asked to separate into pairs or into groups to discuss, analyze, and answer questions, come up with solutions, brainstorm, and/or generate questions for a class discussion. At the end of each class students will be asked to assist in summarizing the most important points of the readings and the class exercises.

**Work Logs, Group Reports, and Final Group PowerPoint Presentation**

**Work Logs**
One student in each group will be asked to turn in a log specifying the type of work that each member of the group conducted during group time (this is limited to the group reports).

**Group Reports and Final Group PowerPoint Presentation**
Groups: Three to four students will be assigned to groups by the instructor at the beginning of the term. Students will remain in the same group throughout the course because each report and the final group presentation build on each other. Every student is expected to participate in the creation and writing of the group reports and final group PowerPoint presentation. Students will be asked to write two group reports and put together one group PowerPoint presentation. Group reports are due at the beginning of the classes specified in the syllabus. 10% will be deducted for each day the assignment is late unless arrangements have been made prior to class.

Group Reports: The following is a description of what needs to be included in the two group reports:

1. First Report - Infectious Disease and Country of Choice: The first report is expected to include demographics of the country of choice (population, per capita income, mortality rates, fertility rates, life expectancy), a historical background on the disease, risk factors, clinical features, biology and mode of transmission, reservoir, occurrence, period of incubation, prevention, testing, diagnosis, and treatment.

2. Second Report - Web of Causation: The second report is expected to include a web of causation (three levels) for the infectious disease of choice with an explanation of at least the three top interrelationships between biologic and social variables.

Group Report Format: Groups will prepare one typed 3-5 page for each of the two reports. The font should be no smaller than Arial 11. Margins should be one inch. Line spacing should be 1.5. Your report should be properly cited following the APA format. Your report should include appendices with tables and maps. A hard copy of each report should be submitted to the instructor due at the beginning of the class as specified in the syllabus. A rubric of how the reports are going to be graded will be posted in CANVAS.

Final Group PowerPoint Presentation: The presentation is a summary of the research each group conducted on the infectious disease, country of choice and web of causation during the winter term. Presentations should include: 1) a brief overview of the country of choice; 2) a brief overview of the disease of choice: a) epidemiology and risk factors, b) clinical features, c) biology and mode of transmission, d) reservoir, e) occurrence and period of incubation, and f) testing, diagnosis, and treatment; 3) social determinants of the disease; 4) specific measures to prevent the infectious disease in the country of choice, and 5) a rationale for why the group chose those measures. A rubric indicating how the presentation will be graded will be posted on CANVAS.

Final Group PowerPoint Presentation Format: Each group will present their specific disease and country of choice to the class in a 20 minute power point presentation (no more than 10-15 slides). All group members are expected to participate in making the presentation.
Quizzes
There will be two quizzes based on the study guides, case studies, class discussions and exercises. Quiz #1 will cover the material from week 1 through week 4, and Quiz #2 will cover the material from week 5 through week 8.

Final Exam
The final exam will cover all the material reviewed during the term. The questions in the final exam will be based on slightly modified clicker questions, in-class exercises, case studies, and study guides.

Canvas
The syllabus, required journal articles, Powerpoint slides, videos, and other course materials will be posted on the Canvas website for EPIB330: http://elms.umd.edu/. Please remember to visit this website prior to each class for updated slides, information on class cancellations, room change, etc.

COURSE PROCEDURES AND POLICIES

Method for Communicating with Students Outside the Classroom
Official communications to the course will be sent through the course announcement tool in ELMS (CANVAS). If you do not have your profile settings such as you receive these notices on daily basis, you will miss important information on this course. It is your responsibility to make sure you are able to receive these notices in the format of your choosing on a daily basis. If you need more information on your ELMS settings, please see the Technology Help Desk on the main floor of the Computer and Space Science Building or by phone at X 5 1500.

Verify your email address by going to www.my.umd.edu.
All enrolled students are provided access to the University’s email system and an email account. All official University email communication will be sent to this email address (or an alternate address if provided by the student). Email has been adopted as the primary means for sending official communications to students, so email must be checked on a regular basis. Academic advisors, faculty, and campus administrative offices use email to communicate important and time-sensitive notices.

Students are responsible for keeping their email address up to date or for redirecting or forwarding email to another address. Failure to check email, errors in forwarding email, and returned email (from “full mailbox” or “unknown user” errors for example), will not excuse a student from missing University announcement, messages, deadlines, etc. Email addresses can be quickly and easily updated at www.my.umd.edu or in-person at the Student Service Counter on the first floor of the Mitchell Building.
Absence Policy
Regular attendance and participation in this class is the best way to grasp the concepts and principles being discussed. However, in the event that a class must be missed due to an illness, the policy in this class is as follows:
1. For every medically necessary absence from class, a reasonable effort should be made to notify the instructor in advance of the class. When returning to class, students must bring a note identifying the date of and reason for the absence, and acknowledging that the information in the note is accurate.
2. If a student is absent more than 2 time(s), the instructor may require documentation signed by a health care professional.
3. If a student is absent on days when tests are scheduled, or homework or papers are due, he or she is required to notify the instructor in advance, and upon returning to class, bring documentation of the illness, signed by a health care professional.
A link to pull information on the new policy covering absences from class can be found at http://www.president.umd.edu/policies/v100g.html

Late work and Missed Exams / Assignments
Answers to the Study Guides are due before midnight the day before class. Assignments are due at the beginning of the class unless specified in the syllabus. If you are ill, or otherwise need to reschedule exams or assignment due dates, please notify the instructor in advance by email so arrangements can be made. 10% will be deducted for each day the assignment is late unless arrangements have been made prior to class. All coursework must be completed by the end of the term, or an incomplete grade will be assigned.

Religious Observances
The University System of Maryland policy provides that students should not be penalized because of observances of their religious beliefs; students shall be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. It is the student’s responsibility to inform the instructor in advance of any intended absences for religious observance.

Special Accommodations / Disability Support Services
If you have a documented disability and wish to discuss academic accommodations for test taking or other needs, you will need documentation from the Disability Support Service (301-314-7682). If you are ill or encountering personal difficulties, please let the instructor know as soon as possible. You can also contact Learning Assistance Services (301-314-7693) and/or the Counseling Center (301-314-7651) for assistance.

Academic Integrity
The University has a nationally recognized Honor Code, administered by the Student Honor Council. The Student Honor Council proposed and the University Senate approved an Honor Pledge. The University of Maryland Honor Pledge reads:

*I pledge on my honor that I have not given or received any unauthorized assistance on this assignment/examination.*

Unless you are specifically advised to the contrary, the Pledge statement should be *handwritten* and signed on the front cover of the final exam in this course. Students who fail to write and sign the Pledge will be asked to confer with the instructor.

The student-administered [Honor Code and Honor Pledge](mailto:mailto:mailto) prohibits students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents and forging signatures.

Compliance with the code is administered by the Student Honor Council, which strives to promote a community of trust on the College Park campus. Allegations of academic dishonesty should be reported directly to the [Honor Council](mailto:301-314-8450) by any member of the campus community. For additional information, consult the [Office of Student Conduct](mailto:Office of Student Conduct).

**Inclement Weather / University Closings**

In the event that the University is closed for an emergency or extended period of time, **students will still be expected to read all the materials, and instruction will proceed online.** During classroom time, students will be asked to participate in class by logging-in into elms to answer the daily quiz questions, and will be required to complete their class assignments online. During school closure, the instructor will communicate to students via Blackboard and email regarding schedule adjustments, including rescheduling of examinations and assignments due to inclement weather and campus emergencies. Official closures and delays are announced on the campus website ([http://www.umd.edu](http://www.umd.edu)) and snow phone line (301-405-SNOW), as well as local radio and TV stations.

**CourseEvalUM**

Your feedback is confidential and important to the improvement of teaching and learning at the University. [CourseEvalUM](mailto:www.courseevalum.umd.edu) will be open for you to complete your evaluations starting about two weeks prior to the last day of the term before exams begin. Please go directly to the website ([www.courseevalum.umd.edu](http://www.courseevalum.umd.edu)) to complete your evaluations.

**Available Support Services**

The University of Maryland Libraries have many resources that will help with the research for your EPIB 610 project. Required and recommended textbooks for EPIB610 have been placed on reserve in the McKeldin Library.
Copyright Notice
The class slides and other materials are copyrighted and may not be reproduced for anything other than personal use without written permission from the instructor.

Grading Procedures

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Total Grade Points:</th>
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<tbody>
<tr>
<td>Study Guides (15 pts.)</td>
<td>180</td>
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<tr>
<td>Case Studies (30 pts.)</td>
<td>120</td>
</tr>
<tr>
<td>Project:</td>
<td>250</td>
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<tr>
<td>a. Group Report #1*(50 pts.)</td>
<td></td>
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<tr>
<td>b. Group Report #2*(50 pts.)</td>
<td></td>
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<tr>
<td>c. PowerPoint Presentation*(100 pts.)</td>
<td></td>
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<tr>
<td>d. Group Evaluation* (50 pts.)</td>
<td></td>
</tr>
<tr>
<td>Quizzes (2 quizzes x 100 pts.)</td>
<td>200</td>
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<tr>
<td>Final exam</td>
<td>250</td>
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* Grading rubrics will be provided for all projects and assignments

Grading

<table>
<thead>
<tr>
<th>Percentage Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>98% +</td>
<td>A+</td>
</tr>
<tr>
<td>94% – 97%</td>
<td>A</td>
</tr>
<tr>
<td>90% – 93%</td>
<td>A-</td>
</tr>
<tr>
<td>88% – 89%</td>
<td>B+</td>
</tr>
<tr>
<td>84% – 87%</td>
<td>B</td>
</tr>
<tr>
<td>80% – 83%</td>
<td>B-</td>
</tr>
<tr>
<td>78% – 79%</td>
<td>C+</td>
</tr>
<tr>
<td>74% – 77%</td>
<td>C</td>
</tr>
<tr>
<td>70% – 73%</td>
<td>C-</td>
</tr>
<tr>
<td>68% – 69%</td>
<td>D+</td>
</tr>
<tr>
<td>64% – 67%</td>
<td>D</td>
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Course schedule
The class sessions will include guest lecturers, discussions, case studies, and exercises. Students are expected to complete the assigned readings prior to the class, and to be prepared to participate in discussions and exercises during class. Readings include textbook chapters, assigned journal articles and/or PowerPoint slides.

<table>
<thead>
<tr>
<th>Module</th>
<th>Topics</th>
<th>Resources</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Orientation (9/1)</td>
<td>Syllabus</td>
<td></td>
</tr>
<tr>
<td>Week</td>
<td>Topic</td>
<td>Textbook/Resource Details</td>
<td>Study Guide/Assignments</td>
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<tr>
<td>2</td>
<td>Historical perspective of infectious diseases (9/8)</td>
<td><em>Nelson: Chapter 1 (pages 1-21)</em></td>
<td>Study Guide Week 2&lt;br&gt;Case Study 1 (The Case of the Blue Death)&lt;br&gt;Group Report 1</td>
</tr>
<tr>
<td>3</td>
<td>Measures of disease frequency (9/15)</td>
<td><em>Aschengrau: Chapter 2 (pages 33-53)</em></td>
<td>Study Guide Week 3&lt;br&gt;Outbreak Investigation Exercise&lt;br&gt;Group Report 1</td>
</tr>
<tr>
<td>4</td>
<td>Infectious diseases (9/22)</td>
<td><em>Nelson: Chapter 2 (pages 19-21)&lt;br&gt;Merrill: Chapter 1 (pages 6-12)</em></td>
<td>Study Guide Week 4&lt;br&gt;Case Study 2 (MDR Tuberculosis)&lt;br&gt;Group Report 1&lt;br&gt;<strong>Turn-in Case Study 1</strong></td>
</tr>
<tr>
<td>5</td>
<td>Spectrum of microbial threats (9/29)</td>
<td><em>Morens: The challenge of emerging and re-emerging infectious disease&lt;br&gt;Choi: Bringing chronic disease epidemiology and infectious disease epidemiology back together</em></td>
<td>Study Guide Week 5&lt;br&gt;HIV Newspaper Readings&lt;br&gt;<strong>Quiz #1</strong>&lt;br&gt;<strong>Turn-in Group Report 1 and Work Log at beginning of Class</strong></td>
</tr>
<tr>
<td>6</td>
<td>Microbial adaptation and susceptibility to infection (10/6)</td>
<td><em>IOM: Chapter 3 (pages 53-64)&lt;br&gt;Webster: Microbial adaptation and change: Avian influenza</em></td>
<td>Study Guide Week 6&lt;br&gt;Game&lt;br&gt;Group Report 2&lt;br&gt;<strong>Turn-in Case Study 2</strong></td>
</tr>
<tr>
<td>7</td>
<td>Changing climate, weather and ecosystems, development and land use (10/13)</td>
<td><em>WHO: Impacts on health of climate extremes (pages 79-96)&lt;br&gt;IOM: Chapter 3 (pages 67-77)</em></td>
<td>Study Guide Week 7&lt;br&gt;Case Study 3 (Dengue in the landscape)&lt;br&gt;Group Report 2</td>
</tr>
<tr>
<td>8</td>
<td>Changing demographics, changing technology and industry, and international travel and commerce (10/20)</td>
<td><em>IOM: Chapter 3 (pages 78-88)&lt;br&gt;WHO: Global demographic change and infectious disease (pages 35-40)&lt;br&gt;WHO: Global technological change and infectious disease (pages 46-50)</em></td>
<td>Study Guide Week 8&lt;br&gt;MERS Newspaper Article&lt;br&gt;Group Report 2&lt;br&gt;<strong>Turn-in Case Study 3</strong></td>
</tr>
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<td>9</td>
<td>Poverty and social inequality, war and famine, the lack of political</td>
<td><em>IOM: Chapter 3 (pages 121-135)</em></td>
<td>Study Guide Week 10&lt;br&gt;Ramadi Newspaper Article&lt;br&gt;<strong>Quiz #2</strong></td>
</tr>
<tr>
<td>Week</td>
<td>Topic</td>
<td>Reading Material</td>
<td>Assignments</td>
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| 10   | The breakdown of public health systems (11/3) | *IOM: Chapter 3 (pages 107-121)*  
*Fauci: Ebola - Underscoring the Global Disparities in Health Care Resources* | Turn-in Group Report 2 and Work Log at beginning of Class  
Study Guide Week 9  
Case Study 4 (U.S. Public health Infrastructure) |
| 11   | Global and local responses, public health system capacity, policies, and surveillance (11/10) | *IOM: Chapter 4 (pages 149-174)* | Study Guide Week 11  
Guest Lecturer  
Group Presentation 3  
**Turn-in Case Study 4** |
| 12   | Developing new diagnostics, new vaccine and antimicrobial development (11/17) | *IOM: Chapter 4 (pages 174-191, 198-204)* | Study Guide Week 12  
Guest Lecturer  
Group Presentation 3 |
| 13   | Effective use of antimicrobials, vector-borne and zoonotic disease control, research agendas and research centers (11/24) | *IOM: Chapter 4 (pages 204-226)* | Study Guide Week 13  
Guest Lecturer  
Group Presentation 3 |
| 14   | How to evaluate real threats and conspiracy theories (12/1) | | PowerPoint Presentations And Work Log |
| 15   | (12/8) | Course Review | |
| 16   | (12/15) | | Final Exam |