EPIDEMIOLOGY OF MICROBIAL PATHOGENS (BSCI 348M)
SUMMER 2015 – UNIVERSITY OF MARYLAND, COLLEGE PARK

Professor: Dr. Jeffrey Olimpo
Office Hours: By appointment only – to be held virtually
E-mail: jeolimpo@umd.edu

COURSE DESCRIPTION
Pre-requisite: A grade of “C” or better in BSCI 105. This course is intended for students who are interested in programs in medicine, nursing, or other allied/public health fields. You will be introduced to the study of diseases of bacterial and viral origin, the adverse effects of disease outbreaks, and their implications for public health safety and practice.

This course is an accelerated, 3-week class that meets asynchronously on Canvas. Please refer to the schedule at the end of this syllabus for a detailed description of what topics will be covered and when assignments will be collected. You should begin by completing the online orientation module prior to the first module opening on 6/1/15.

COURSE OBJECTIVES
This course is designed to provide students with a broad introduction to the field of Epidemiology & Public Health as it relates to bacterial and viral pathogens. Students completing this course will:

• Gain an understanding of the central tenets of the field of Epidemiology & Public Health, including goals of epidemiological studies, notable figures in the history of the field, and basic epidemiological terminology.
• Be able to explain and apply the basic concepts of disease transmission.
• Be able to explain and apply the basic concepts of morbidity and mortality using real-world data, including the ability to calculate morbidity and mortality statistics.
• Be able to describe the similarities and differences between descriptive and randomized epidemiological studies.
• Gain an understanding of the molecular basis and public health impacts of various bacterial pathogens affecting human and animal hosts.
• Gain an understanding of the molecular basis and public health impacts of various viral pathogens affecting human and animal hosts.

COURSE TEXTBOOKS (REFERENCE/RECOMMENDED)
Epidemiology, 4th Edition, Gordis
ACADEMIC INTEGRITY
All UMD students are held accountable to the Student Code of Academic Integrity, which outlines expectations pertaining to academic honesty (including plagiarism). The Code can be found in full at http://www.president.umd.edu/policies/docs/III-100A.pdf. At my discretion, and based on the recommendation of the honor council, sanctions may range from a failing grade on the relevant assignment to dismissal from the class and a failing grade for the course. The Student Academic Grievance process can be used if you feel you have been treated unfairly by this policy.

COMMUNICATIONS
You may post general questions about the class in the "Ask Dr. Olimpo" discussion board forum. If you have questions about the weekly materials, post them directly in the weekly forum created for that purpose. Expect a reply within 24-48 hours (students are also encouraged to post a reply!). E-mail should only be used for issues that are not appropriate for the whole class (e.g., questions about your grade or personal issues).

When you send me an e-mail, please include a proper subject, any message you are responding to, the course name, as well as your name. Use your UMD terpmail account to ensure that the e-mail is not blocked by the university's spam filter. If you e-mail directly from Canvas, essential information like the course name and section will automatically be included. I will do my best to respond to your e-mail within 24-48 hours. If you don't get a response in this timeframe, there is probably a technical problem, and you should please forward me your e-mail again. Ensure that you regularly check the e-mail account listed for you in Canvas, as this is where I will be sending announcements/e-mails.

DISABILITY SUPPORT SERVICES
Students with disabilities who wish to request accommodations should please contact me as soon as possible so that we may have a private conversation to discuss those accommodations. In addition, you should contact DSS services (http://www.counseling.umd.edu/DSS), if you have not already done so, as a necessary step in ensuring accommodations can be provided.

TECHNICAL SUPPORT
For minor issues, I may be able to assist you. However, in the event that you encounter larger issues regarding use of Canvas, password/login resets, or university e-mail issues, the Division of Information Technology (DIT) Customer Support Team can assist you. Hours and other helpful information can be found at http://www.it.umd.edu/.
COURSE GRADING & EXPECTATIONS

COURSE GRADING

LECTURE POINTS (195 pts.):

- Homework (3 @ 15 pts.) 45 pts.
- Midterm Exam #1 (Week #1) 50 pts.
- Midterm Exam #2 (Week #2) 50 pts.
- Midterm Exam #3 (Week #3) 50 pts.

DISCUSSION POINTS (105 points):

- Case Studies (3 @ 15 points) 45 pts.
- “My Favorite Disease” Blog 50 pts.
- Start- and End-of-Term Surveys 10 pts.

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<thead>
<tr>
<th>Grade</th>
<th>Points</th>
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<tbody>
<tr>
<td>A</td>
<td>≥270 pts.</td>
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<tr>
<td>B</td>
<td>240 – 269 pts.</td>
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<tr>
<td>C</td>
<td>210 – 239 pts.</td>
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<tr>
<td>D</td>
<td>180 – 209 pts.</td>
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<tr>
<td>F</td>
<td>&lt; 180 pts.</td>
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* Please note that the “+/−” system will be used in this course!

ATTENDANCE

Online attendance and participation in all parts of this course is expected. Attendance, in my view, is essential and can dramatically impact your learning and final grade in the course. Attendance is defined as the viewing of all online lectures and submission of all assignments, including any required posts to the discussion board (more than merely accessing the course). Since this is an online course, excused absences will only be granted in extreme cases when advanced notice is provided. In these cases, any assignments due on the day you were absent must be completed within 24 hours. No make-up exams will be administered without prior approval!

CANVAS

This class meets in Canvas® (http://elms.umd.edu). You will use Canvas to download lectures, access assignments, download or print course materials, and check your grades. You will notice that our Canvas site is set up as a series of modules, one for each week of the course + one orientation module. You must complete the modules in order, beginning with the orientation module. New modules will be released each Monday morning (at the latest).
LECTURES
Though the class meets asynchronously, I am recommending that you view two lectures per day in order to pace yourself. Each lecture consists of a pre-recorded video and accompanying PowerPoint notes, both of which you can download from Canvas. It is in your best interest to print the PowerPoint slides prior to each day’s lecture, and then add notes as you listen to the lecture recordings. Additionally, you may want to jot down any questions you have in the margin as you’re listening; that way, you can submit the questions to the discussion board at a later date without trying to have to remember what the questions were in the first place. Importantly, video lectures can be downloaded and played (including fast-forwarding/rewinding) as often as you’d like, so do not hesitate to revisit them as necessary.

MID-TERM EXAMS
You are required to complete all examinations. Exams not taken will be averaged in as a grade of zero. This semester, there will be three mid-term exams. These exams will be available online on Friday, 6/5/2015; Friday, 6/12/2015; and Thursday, 6/18/2015, from 8:00am-8:00pm (EST). Each exam is comprised of a series of 25 multiple-choice and T/F questions, and you will have 35 min. to complete the exam once you open it. Note that you MUST complete exams in a single sitting once you begin, and each question will “lock” once you proceed to the subsequent question.

Please prepare! Though this is an online course and you have access to the entirety of your lecture materials, the questions will be presented to you in random sequence, so you must be prepared. Under no circumstances may you work with another individual on any portion of these exams—this will result in you receiving a grade of “F” for the course!!! No make-up examinations will be given without prior approval.

HOMEWORK
Homework assignments can be found under the appropriate weekly module. To submit homework #1, for instance, you might access the first module, navigate to homework #1 (and download it), click the “homework #1” assignment link (it looks like a graded paper), and then submit your work. All homework assignments should be submitted by 5:00pm (EST) on the date they are due using the text response box feature in the Canvas “assignment” tool. Homework topics and due dates can be found in the schedule at the end of the syllabus.

CASE STUDIES (CS)
The case studies we will complete this semester focus on issues related to food borne illnesses, vaccine development, and antibiotic resistance. These activities are designed to highlight the real-world applications of the topics we are discussing in class, particularly from a public health perspective. Note that two different formats will be used for submitting case study assignments:
Case Study #1: Typed or scanned-in responses to the case study should be submitted on Thurs., 6/4/2015, by 5:00pm (EST).

Case Studies #2 & #3: For these case studies, you will engage in a discussion with your peers regarding the materials presented to you in the Frontline videos available in the 2nd and 3rd course modules. Specific instructions and prompts for completing these discussion boards can be found by clicking directly on the discussion board icons within Canvas. Responses to case study #2 will be due on Thurs., 6/11/2015, by 5:00pm (EST), and responses to case study #3 will be due on Weds., 6/17/2015, by 5:00pm (EST). Keep in mind that discussion boards open the Monday the module begins, so you have the opportunity to work ahead, if you so desire.

“My Favorite Disease” Blog
The “My Favorite Disease” blog requires you to keep a weekly blog about a particular disease of interest to you. Specific requirements for this assignment will be sent to you via e-mail during the first week of class and will be posted under the “My Favorite Disease Blog” module on Canvas. Completed blog URLs should be submitted no later than 6/19/2015 at 5:00pm (EST) using the appropriate Canvas assignment feature.

An important note: The “My Favorite Disease” Blog module will be open the ENTIRE semester. This means that you will have immediate access to the blog instructions and blog submission link. I will not, in any way, prevent you from working ahead, so it is up to you to decide how you want to tackle this project.

Start- and End-of-Term Surveys
You will be asked to complete two surveys this semester: one at the beginning of the course (to be completed on or before 6/1/2015) and one on the final day of the course (6/19/2015). Your feedback is an important piece of thinking about how to improve the course for future semesters and in understanding how the course has impacted your learning. These evaluation will be due by 8:00pm (EST) on the date assigned and will net you an easy 10 pts. toward your final grade in the course.
LECTURE SCHEDULE

Please keep in mind that what follows is a recommended outline for how you might go about completing the course. Assignments and exams are the only items that MUST be completed by or on the date specified! This means that you can watch the lectures at your leisure (not necessarily two per day, as I’m recommending).

Orientation Module: Getting to Know Your Classmates (complete before 6/1/15)

Student Learning Objectives:
- To introduce yourself to other members of the course and to get to know your online learning community
- To assess prior (i.e., pre-course) knowledge

Discussion Board:
Please navigate to the discussion board links under the Orientation module on our Canvas site. You will notice that two discussion boards are open, one titled “Introduce Yourself!” and the other titled “Ask Dr. Olimpo”. Your task is as follows:

1. On the first discussion board, provide a brief introduction of yourself, including your name, academic major, career interests/goals, and hobbies. If you feel comfortable doing so, please also include a picture of yourself! This will help others to get to know you better and to create a more welcoming online community.

2. After you have taken the time to explore the course site, please post any questions or concerns you might have on the second discussion board. In addition, if you have any specific expectations for the course, please post those here as well.

Module Homework Assignments:

| Start-of-Term Survey | 6/1/15 |

Module 1: Exploring the Essentials of Epidemiology (6/1/15 – 6/5/15)

Student Learning Objectives:
- To describe the central tenets of the field of epidemiology & public health, including goals of epidemiological studies, notable figures in the history of the field, and basic epidemiological terminology and research study designs
- To explain and apply the basic concepts of disease transmission
- To explain and apply the basic concepts of morbidity and mortality using real-world data, including calculating morbidity and mortality statistics

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<thead>
<tr>
<th>DATE</th>
<th>LECTURE/DISCUSSION TOPIC</th>
<th>TO READ...</th>
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<tbody>
<tr>
<td>M., June 1st</td>
<td>Introducing the Field of Epidemiology</td>
<td>Chapter 1 (G)</td>
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<tr>
<td></td>
<td>Disease Transmission</td>
<td>Chapter 2 (G)</td>
</tr>
<tr>
<td>T., June 2nd</td>
<td>Measures of Morbidity</td>
<td>Chapter 3 (G)</td>
</tr>
</tbody>
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### Module 2: Epidemiology of Bacterial Pathogens (6/8/15 – 6/12/15)

#### Student Learning Objectives:
- To gain a broad understanding of the molecular basis and public health impact of various bacterial pathogens that affect human and animal hosts

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<tr>
<th>DATE</th>
<th>LECTURE/DISCUSSION TOPIC</th>
<th>TO READ…</th>
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<tbody>
<tr>
<td>M., June 8&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Bacterial Pathogenesis: An Introduction</td>
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<td></td>
<td>Penicillin: An Age-Old Antibiotic</td>
<td>See link below</td>
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<tr>
<td>T., June 9&lt;sup&gt;th&lt;/sup&gt;</td>
<td><em>Mycobacterium tuberculosis</em> – respiratory infections</td>
<td>Chapter 22.5 (N)</td>
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<td></td>
<td><em>Streptococcus mutans</em> – oral/digestive health</td>
<td>Chapter 25.3 (N)</td>
</tr>
<tr>
<td>W., June 10&lt;sup&gt;th&lt;/sup&gt;</td>
<td><em>Neisseria gonorrhoeae</em> – urogenital diseases</td>
<td>Chapter 26.2 (N)</td>
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<td><em>Listeria monocytogenes</em> – nervous system infections</td>
<td>Chapter 27.2 (N)</td>
</tr>
<tr>
<td>H., June 11&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Case Study #2: <em>Hunting the Nightmare Bacteria</em></td>
<td>CS2 (discussion)</td>
</tr>
<tr>
<td>F., June 12&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Mid-Term Exam #2</td>
<td>Note: You will need a calculator!!</td>
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#### Module Homework Assignments:
- Homework #2: Penicillin – The Miracle Drug 6/9/15
- Case Study (CS2): *Hunting the Nightmare Bacteria* 6/11/15

Penicillin: An Age-Old Antibiotic
[http://www.sciencedaily.com/releases/2014/12/141205114011.htm](http://www.sciencedaily.com/releases/2014/12/141205114011.htm)
Module 3: Epidemiology of Viral Pathogens (6/15/15 – 6/19/15)

**Student Learning Objectives:**
- To gain a broad understanding of the molecular basis and public health impact of various viral pathogens that affect human and animal hosts

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<thead>
<tr>
<th>DATE</th>
<th>LECTURE/DISCUSSION TOPIC</th>
<th>TO READ...</th>
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<tbody>
<tr>
<td>M., June 15th</td>
<td>Viral Pathogenesis: An Introduction</td>
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<td></td>
<td>Human Immunodeficiency Virus (HIV)</td>
<td>Chapter 29 (N)</td>
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<td>T., June 16th</td>
<td>Rhinoviruses, Noroviruses, &amp; Influenza: Oh My!</td>
<td>Chapter 22.4/22.6 (N)</td>
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<td>W., June 17th</td>
<td>Foot-and-Mouth Disease Virus</td>
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<td>Watch Frontline Video: Vaccine Wars</td>
<td>CS3 (discussion)</td>
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<td>H., June 18th</td>
<td>Mid-Term Exam #3</td>
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<td>Note: You will need a calculator!!</td>
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<tr>
<td>F., June 19th</td>
<td>“My Favorite Disease” Blogs Due</td>
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<td>Complete End-of-Term Survey</td>
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**Module Homework Assignments:**
- Homework #3: Basics of Viral Pathogenesis  6/16/15
- Case Study (CS3): Vaccine Wars  6/17/15
- End-of-Term Survey  6/19/15

_Disclaimer: The professor reserves the right to change the contents of this syllabus due to unforeseen circumstances. Students will be given notice of relevant changes through Canvas and e-mail. Exam dates will NOT change._

_WELCOME TO BSCI 348M!!!