

## Valdosta State University

### BIOL 4000/6000 Topics in Biology I: Emerging Infectious Diseases Summer 2014

**Instructor:** Dr. Eric W. Chambers

**Lecture hours:** 8:00 – 10:35 am MTWRF, BSC Room 1023

**Office Hours:** 1:00 – 2:00 MW, BSC Room 2214

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#### **Text:**

(1) Emerging Infectious Diseases: A Guide to Diseases, Causative Agents, and Surveillance by Lisa A. Beltz, Jossey-Bass ISBN: 0470398035

(2) Primary literature dealing with emerging infectious diseases. These will be available to students through Blazevue.

**Course Description:** This course will explore the growing problem of emerging infectious diseases. Old foes of humanity such as malaria, influenza, tuberculosis, dengue and yellow fever are re-emerging with a vengeance while a host of new diseases such as AIDS, SARS, Ebola virus, Nipah virus, and others are emerging. The epidemiology of these diseases is highly complex and is linked to changes in animal and vector populations and the environment as well as socio-political and demographic changes worldwide. In this course we will seek to understand the biology of selected disease pathogens and how the aforementioned factors impact disease transmission. Current, as well as proposed, methods of control will be explored. The potential of these pathogens for use as agents of bioterrorism will also be discussed.

**Course goals:** The purpose of this course is to provide you with a broad introduction to infectious disease agents. Upon completion of this course you will be familiar with major global emerging infectious diseases. You will become familiar with the causative agents of each disease as well as with their associated vectors. The manifestation of disease symptoms will be addressed including the molecular basis of infection. You will be introduced to the symptoms associated with each disease and you will learn how the human immune system responds to infection. You will also become acquainted with the diagnosis, treatment, and prevention of the diseases covered in the course. You will learn the factors associated with transmission of these diseases and the important role of disease surveillance. Finally, you will be familiar with those agents that could be employed as agents of bioterrorism.

This course will serve as an excellent introductory course in infectious diseases for Masters level students who will be pursuing future graduate studies in Biology as well as for those who will be pursuing careers in medicine and public health.

**Educational outcomes: Listed at the end of syllabus**

**Attendance:** Attendance in lecture is mandatory and is part of the participation grade. The textbook is only a jumping-off point for the material we will cover in this course. The lectures will provide more detailed information and context to the subject. **You will have difficulty passing this course if you do not attend lecture.**

**Lecture Conduct:**

- Arrive on time.
- **Turn off/silence cell phones during class.**
- **BUT** do ask questions
- 
- emergency) do not get up in the middle of lecture, leave and come back.
- **Do not leave class early**
- During exams **NOBODY** can leave the exam and re-enter the exam room. If a student leaves, their exam will be graded as is; the student will not be allowed to finish the exam.

**Dropping the course:** The last day to drop the course is June 13, 2014

**Withdrawing from the course:** The last day to withdraw from the course (you will receive a W) is June 20, 2014. If you don't officially withdraw, and instead just stop coming to class, you will receive an F for the course.

**Academic conduct:** Cheating and plagiarism will not be tolerated and may result in a failing grade for the assignment, exam or the class. The Department of Biology has a plagiarism policy, which will be handed out during the first lab period.

**Student identification:** Students should have in their possession at all times their VSU student identification card. In order to verify the identification of

request official student photo identification cards at any time during lecture. During examinations, students will routinely be asked to display their VSU student identification cards visibly on the desktop and to make them available for inspection by their instructor and/or assistants.

**Privacy Act (FERPA):** The Family Educational Rights and Privacy Act (FERPA) prohibits the public posting of grades by social security number or in any manner personally identifiable to the individual student. No grades can be given over the

**Students with disabilities:** Students requiring special accommodations because of disability should discuss their needs with me as soon as possible. Those needing accommodations that are not registered with the Special Services

1. What is the question or hypothesis being tested in the article
2. Why did the authors conduct this study? What is the importance of this work?
3. Do the Methods of the paper test the hypothesis. Is the design appropriate for the study or should it have been different?
4. Briefly state the conclusions and state if they are supported by the results.
5. Give an example of at least one follow up study that could be performed.
6. Did you think the study was interesting or boring? State why

I will provide a rubric and detailed format at a later date. Spelling and grammar will count!! **There will be a 10% reduction in grade for each day the assignment is late.**

**Oral Report (Graduate Students only-10%).** You will prepare and present a 15-minute Power point presentation on one of the papers you selected for your literature critique. You will be expected to discuss the background behind the study, the methods used, the results, and finally you will share with the class the reasons why this was an important study.

**Participation (5%): This course will emphasize both lecture and discussion.** Attendance is mandatory. You should be prepared to ask questions and discuss the material. In addition to attendance all students will be expected to monitor ongoing disease outbreaks using resources available on the internet (<http://www.promedmail.org/>; <http://www.cdc.gov/mmwr/>; etc) and share information about ongoing

### Summer 2014 TENTATIVE LECTURE SCHEDULE

Topics	Chapters
Unit 1 Introduction and Bacterial Diseases	
Course Intro Brief History of Infectious Diseases	Beltz 1
How humans and pathogens interact	Beltz 2
Lyme Disease	Beltz 3
Anthrax	TBA
Plague	TBA
Tuberculosis	Beltz 10
Cholera	TBA
<b>EXAM #1</b>	<b>June 18</b>
<b>UNIT 2 - VIRAL INFECTIONS</b>	
Hemorrhagic Fevers	Beltz 12
Dengue Fever	Beltz 15
Arboviruses	Beltz 22
HIV and AIDS	Beltz 16
Epidemic and Pandemic Influenza	Beltz 19

1. Students will demonstrate understanding of the society of the United States and its ideals. They will possess the requisite knowledge of the society of the United States, its ideals, and its functions to enable them to become informed and responsible citizens. They will understand the connections between the individual and society and the roles of social institutions. They will understand the

relationships among the visual and performing arts, literature and languages, and history and the social sciences. Students will be versed in approaches appropriate to the study of those disciplines; they will identify and respond to a variety of aesthetic experiences and engage in critical thinking about diverse issues. They will be able to identify the components of and respond to aesthetic experiences in the visual and performing arts. They will develop knowledge of world literature within its historical and cultural frameworks. They will understand modern issues within a historical context and the role of the individual in various forms of societies and governments.

7. Students will demonstrate the ability to analyze, to evaluate, and to make inferences from oral, written and visual materials. They will be skilled in inquiry, logical reasoning, and critical analysis. They will be able to acquire and evaluate relevant information, analyze arguments, synthesize facts and information, and offer logical arguments leading to creative solutions to problems.

8. Students will demonstrate knowledge of principles of ethics and their employment in the analysis and resolution of moral problems. They will recognize