

**Valdosta State University, BIOL 3860/5860, Section A (3 credit hours)**  
**Emerging Infectious Diseases, SUMMER IV 2024**  
**Syllabus and Course Policies**

Lecture: Bailey Science Center, room 1024- MTWRF 8:00-10:35 am

Instructor: Eric W. Chambers, Ph.D.

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Office Hours: MWF @11:00 AM – 12:00 PM or by appointment

Prerequisites: BIOL 1107, 1107L, BIOL 1108, 1108L, and BIOL 3200 or permission of instructor.

**Course Description**: An overview of emerging human infectious diseases with a special emphasis on biological factors impacting their transmission and control.

**Recommended Reading and Viewing Materials:**

1. Emerging Infectious Diseases: A Guide to Diseases, Causative Agents, and Surveillance by Lisa A. Beltz, Jossey-Bass ISBN: 0470398035. Available on line at [https://galileo-valdosta.primo.exlibrisgroup.com/permalink/01GALI\\_VALDOSTA/eo9m8/alma9923518004302931](https://galileo-valdosta.primo.exlibrisgroup.com/permalink/01GALI_VALDOSTA/eo9m8/alma9923518004302931)
2. Microbiology by Nina Parker et al., OpenStax ISBN-13: 978-1-50669-811-3. Available online at <https://openstax.org/details/books/microbiology>
3. Bats and Human Health: Ebola, SARS, and Beyond by Lisa A. Beltz, Wiley Blackwell ISBN: 9781119150039. Available on line at [https://galileo-valdosta.primo.exlibrisgroup.com/permalink/01GALI\\_VALDOSTA/eo9m8/alma9916215411202931](https://galileo-valdosta.primo.exlibrisgroup.com/permalink/01GALI_VALDOSTA/eo9m8/alma9916215411202931)
4. Primary literature dealing with emerging infectious diseases. These will be available to students through Blazeview
5. Video presentations as assigned by Dr. Chambers

**Course goals**: This course will explore issues associated with emerging infectious diseases (EID). Currently, we find ourselves impacted by the first truly dangerous global pandemic in the last 100 years, the SARS-CoV-2 pathogen, the causative agent of COVID19. In addition, we are now grappling with the emergence novel forms of avian influenza within hers of domestic dairy cows. We should not be surprised by the rapid emergence of these dangerous viruses. Over the past 50 years we have seen the ongoing emergence of a variety of microbes that have caused dangerous levels of morbidity and mortality on a global scale. In this course we will investigate newly emerging diseases including HIV-AIDS, novel human coronaviruses (SARS, MERS, and COVID19), Ebola virus disease (EVD), Nipah virus (NiV), Zika virus, and others. In addition, we will explore the old foes of humanity, including influenza, and vector borne diseases such as malaria, West Nile virus, dengue virus, Chagas disease and African sleeping sickness.

The purpose of this course is to provide you with a broad introduction to newly emerging infectious disease agents. Upon completion of this course you will be familiar with major global emerging infectious diseases. You will also 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 both the diseases covered in the course as well as management of the vectors that transmit the disease pathogens. 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.

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

**Attendance:** This is a 3-week in-person course. It is essential for you to attend lecture each morning. You will receive additional instruction and clarification on the topics that you will not receive by just reading the text or reviewing the PowerPoint slides. In addition, there will be short assignments that we will be completing during lecture time that **you cannot make up outside of class**. The key to success in this course is to **NOT** procrastinate! That means keeping up with the daily readings, videos, and assigned work!

**Grade Assessment:** Your final grade will be based on your performance on homework, lecture examinations and written assignments

**1. Unit Exams (200 points):** There will be two exams in this course. The first will be administered at mid-term and the second on the day scheduled for the final exam. Each exam will cover the material for a specific unit and will consist of a variety of question types. The questions may be in the form of multiple choice or matching questions as well as short or long-form written responses. You will be expected to use basic math/algebra skills to interpret and solve epidemiological data associated with a disease outbreak. The exams are closed book and will be administered during the class period. You will need to bring a simple scientific calculator for each exam.

**2. PowerPoint Presentation (100 points):** You will prepare a PowerPoint presentation on an emerging infectious disease pathogen. The pathogen will be drawn at random during a classroom lottery. **The presentation should be 7-10 slides**. You should include the background/history on the pathogen, discuss the epidemiology and transmission of the pathogen, describe the symptoms and potential outcomes following infection, treatments for the pathogen, and a discussion on future dangers this pathogen/disease presents to humans. I will provide more details on this project in class.

**3. Extra Credit (15 points):** You will view the film [Contagion](#) and complete a short-written assignment. I will screen the film on-campus outside of class-time so that everyone has an opportunity to view the film-or you can watch the film on your own on Blu-ray or via a streaming service.

**Course Grade:**

The following grade scale will be used to determine the final course grade. For Biology majors, a grade of C or higher is required for this course.

**Grade Scale:**

A 90-100%

B 80-89%

C 70-79%

D 60-69%

F < 60%

**BIOL 5860 Students:**

In addition to the unit exams and Powerpoint presentation you will also complete the assignment listed below.

1. You will complete one literature critiques on any topic concerning an infectious disease pathogen. The paper must be a primary research paper (introduction, methods, results, discussion). It can focus on any aspect of the pathogen/disease; epidemiology, genetics, immunology, drug development, etc. I will provide you with additional details in class.

**Dropping the course:** The last day to drop the course is July 9, 2024 @ 11:59 PM

**Withdrawing from the course:** The last day to withdraw from the course (you will receive a W) is 11:59 PM, July 18, 2024. 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 students officially enrolled in the course, it is the instructor's prerogative to 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 telephone or over email because positive identification can't be made.

**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 Program must contact the Access Office for Students with Disabilities located in Farber Hall. The phone numbers are 245-2498 (voice) and 219-1348 (tty).

### Summer 2024 TENTATIVE LECTURE SCHEDULE

Date	Topic	Reading Assignments
July 9	History of Infectious Diseases Review of Immune System	EID: Chap 1 & 2 OpenStax Micro: Chap 17 & 18
July 10	Zoonoses and One Health	Bats & Human Health: Ch. 15
July 11	HIV and AIDS	EID: Ch. 16
July 12	Ebola virus disease (EVD)	EID: Ch. 12 Bats & Human Health: Ch. 4
July 15	EID-Med Vet-Dr. Richard Thacker	TBA
July 16	EID-Med Vet-Dr. Richard Thacker	TBA
July 17	EID-Med Vet-Dr. Richard Thacker	TBA
July 18	Henipaviruses (Nipah and Hendra viruses)	Bats and Human Health: Ch. 3
<b>July 19</b>	<b>Exam #1</b>	<b>Topics (July 9-July 17)</b>
July 22	Coronaviruses (SARS, MERS, SARS-CoV-2)	EID: Ch. 21 Bats and Human Health: Ch. 5
July 23	Coronaviruses (SARS, MERS, SARS-CoV-2)	EID: Ch. 21 Bats and Human Health: Ch. 5
July 24	Epidemic and Pandemic Influenza	EID: Ch. 19; TBD
July 25	Epidemic and Pandemic Influenza	EID: Ch. 19; TBD
July 26	Small Pox and Monkey Pox	EID: Ch. 23; TBD
July 29	Cholera & Tuberculosis	TBD
July 30	Agents of Bioterrorism	TBD
July 31	Study Day (no class)	NA
<b>August 1</b>	<b>Exam #2</b>	<b>Topics (July 22-July 30)</b>

#### VALDOSTA STATE UNIVERSITY GENERAL EDUCATIONAL OUTCOMES (GEO)

4. Students will express themselves clearly, logically and precisely in writing and in speaking, and they will demonstrate competence in reading and listening. They will display the ability to write coherently in standard English; to speak well; to read, to understand, and to interpret the content of written materials in various disciplines; and to listen effectively and to understand different modes of communication.

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.

#### DEPARTMENT OF BIOLOGY EDUCATIONAL OUTCOMES (BEO)

1. Develop and test hypotheses, collect and analyze data, and present the results and conclusions in both written and oral format used in peer-reviewed journals and at scientific meetings.

3. Demonstrate an understanding of the cellular basis of life.

4. Relate the structure and function of DNA/RNA to the development of form and function of the organism and to heredity

5. Interpret ecological data pertaining to the behavior of the individual organism in its natural environment; to the structure and function of populations, communities, and ecosystems; and to human impacts on these systems and the environment.