

BIO 1006 - Global Health and Pathogens (4 units)

Spring 2021 | J Term - January 11- February 12



BIO1006: Global Health and Pathogens

Meeting days: Friday Review Session	Instructor: Dr. Mike Mooring / Dr. Paul Silva
Meeting times: 10:00-11:00	The best way to communicate with us is by EMAIL!
Meeting location: Zoom	Email: mmooring@pointloma.edu / psilva@pointloma.edu
Office Hours Zoom: Friday 11:00-12:00	Office hours: Friday 11:00-12:00

PLNU Mission

To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

COURSE DESCRIPTION

An examination of current topics in global health as they impact society, bioethics, and creation care. The course addresses the topics of the major pathogens that threaten global health, the basic immune response to a pathogen, how vaccines work, and challenges to fighting pathogens on a global level. The course approach emphasizes critical thinking, active learning, social relevancy, and building connections between case studies and general concepts of biology. Online.

INSTITUTIONAL LEARNING OUTCOMES (ILO's)

1. **Learning** - students will acquire knowledge of human cultures and the physical and natural world while developing skills and habits of the mind that foster lifelong learning.
2. **Growing** - students will develop a deeper and more informed understanding of others as they negotiate complex professional, environmental and social contexts.
3. **Serving** - students will serve locally and/or globally in vocational and social settings.

COURSE LEARNING OUTCOMES (CLO's)

The following student learning outcomes will be achieved by this course; student will be able to:

1. list the major pathogens that threaten global health.
2. describe the differences between viruses, prokaryotic pathogens, and eukaryotic pathogens.
3. describe a basic immune response to a pathogen.
4. describe how a vaccine works and why some pathogens are challenging to develop vaccines for.
5. describe other challenges to fighting pathogens on a global level.
6. effectively express ideas and information to others through written communication.
7. to examine, critique, and synthesize information in order to arrive at reasoned conclusions.

CREDIT HOUR INFORMATION

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a **four-unit** class delivered over **five weeks**. It is anticipated that students will spend a minimum of 30 participation hours per credit hour on their course work. The overall time expectations for this course are shown below and weekly expectations are found in each weekly introduction.

Distribution of Assignments	
Assignments	Hours
Readings	36
Online Discussions/Responses	36
Assignments	34
Preparation for and Taking Quizzes, Surveys, and Exams	21
Video Lectures/Animations/Office Hours	15
Final Project	8
Total	150

REQUIRED TEXTS

Hotez, P. J. (2013). *Forgotten People, Forgotten Diseases: The Neglected Tropical Diseases and their Impact on Global Health and Development*. Washington D.C.: ASM Press.

Quammen, D. (2013). *Spillover: Animal Infections and the Next Human Pandemic*. New York, NY: W. W. Norton & Company.

Sherman, I. W. (2007). *Twelve Diseases that Changed the World*. Washington D.C.: ASM Press.

Other selected readings will be provided as pdf files. **Note:** The texts are available as new or used.

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GRADE SCALE

Final grades will be determined by the grade scale listed below.

Grading Scale - At the end of the semester, a letter grade for the course will be based on the following scale:

Grade Scale				
Standard Grade Scale Based on Percentage of Points Earned				
A	B	C	D	F
A 93-100	B+ 87-89	C+ 77-79	D+ 67-69	F ≤ 59
A- 90-92	B 83-86	C 73-76	D 63-66	
	B- 80-82	C- 70-72	D- 60-62	

ASSESSMENT AND GRADING: 1000 points total

Your grades will be posted in the Canvas grade book no later than midnight on **Tuesday** of each week beginning in Week Two of this course. It is important to read the feedback provided in the grade book as these comments are intended to help you improve your work. Final grades will be posted within ten days of the end of the class. Multiple measures of evaluation are used in the course, allowing students opportunities to demonstrate their learning in more than one way, and giving consideration to individual learning styles. Course components that will be evaluated include:

1. **Discussion and Responses** (250 pts)
2. **Individual Assignments** (170 pts)
3. **Collaborative Group Assignments and Evaluation** (130 pts)
4. **Quizzes** (100 pts)
5. **Final Exam** (200 pts)
6. **Final Project** (150 pts)

COURSE REQUIREMENTS

Notes on Group Assignments: Since the class is so short, students will be assigned into groups of 3 at the beginning of the class, and they will keep these groups for the whole time. Importantly, each person will complete a group member evaluation at the end of the course.

Notes on Discussion Boards: Students must always post before they can see others' posts. They must always respond to two posts of classmates.

1. **Discussion and Responses (250 points)**

Each week students will participate in online discussions with classmates, which are related to the week's readings and content. These discussions replace the interactive dialogue that occurs in the traditional classroom setting.

These assignments are interspersed throughout every module. They include discussion boards and life application assignments to Scripture. All response exercises can be found in each module along with the due dates. A point breakdown is given below, and it is based on the amount of time estimated to complete the discussion assignments. (M indicates Module number; D indicates Discussion number; LA indicates Life Application number.)

Introductory Discussion: 10 points

M1D1; M1D2; M2D1; M2D2; M3D1; M4D1; M5D1; M5D2: 20 points each

M1LA1; M2LA2; M3LA3; M4LA4: 20 points each

2. **Individual Assignments (170 points)**

There are written assignments that are due throughout the course. Reminders of due dates can be found in the modules as well as the calendar on Canvas. These assignments must reflect college-level writing and critical thinking. A point breakdown is given below, and it is based on the amount of time estimated to complete the assignments. (M indicates Module number, and A indicates Assignment number.)

M1A1; M1A3; M2A1; M2A3; M4A2; M5A1: 25 points each

M1A4: 20 points

3. **Collaborative Group Assignments and Evaluation (130 points)**

Due to the complex nature of some of the readings, these assignments are designed so that a group of three can work together on the assignment and bounce ideas off of each other. You will be assigned into groups at the beginning of the course, and you will keep your same group for the whole course. A confidential group member evaluation will be turned in at the end of the course. A point breakdown is given below, and it is based on the amount of time estimated to complete the assignments. (M indicates Module number, and A indicates Assignment number.)

M1A2; M4A1; M5A2: 30 points each

M2A2: 40 points

4. **Quizzes (100 points)** There are 5 quizzes to test your understanding of some of the readings, and each quiz is worth 20 points. (M indicates Module number, and Q indicates Quiz number: M1Q1; M2Q2; M3Q3; M3Q4; M5Q5).

5. Final Exam (200 points)

The final exam will be cumulative and will focus on the major concepts that we covered throughout the course.

This exam will occur via Honorlock, and you need the **Chrome browser and a webcam** in order to make that work.

The Final Exam represents 20% of the overall course grade.

6. Final Project (150 points)

The required signature assignment for this course will be a PowerPoint presentation on a disease (CLO6,7). In this presentation, the students will present information on a pathogen that threatens global health (CLO1). They will describe the type of pathogen it is (CLO2), and describe how the immune system responds to the pathogen (CLO3). They will discuss whether a vaccine is being developed for this pathogen (CLO4) and what the challenges are in treating people in developing countries (CLO5).

The final assignment for this course serves as an opportunity for you to apply your knowledge of Informal Interpretive Communication through a class presentation. The purpose of the final project is for you to culminate the learning achieved in the course.

The Final Project represents 15% of the overall course grade.

COURSE POLICIES

ATTENDANCE

Regular and punctual attendance is considered essential to optimum academic achievement. As a student in this course, in addition to attending the face-to-face sessions, you will have a minimum attendance requirement of three days each week. This means you will need to log into Canvas and post an assignment or response on at least three days in each week. Any day missed below this minimum requirement will count as an absence. Students may be dropped from the course if two such absences are recorded during the class and **will be** dropped if four such absences occur or if a student fails to attend class in any given week.

If you desire to succeed in this course, you will need to organize your schedule each week so you are able to devote time each week, to reading, responding and completing assignments in the course. The weekly demands are great and you must remain self-motivated and structure your time wisely in order to succeed.

INCOMPLETE AND LATE ASSIGNMENTS

All assignments are to be submitted by the due dates posted. There will be a 10% reduction of possible points for each day an assignment is late. If missing assignments result in your failure to meet learning outcomes, this instructor may give up to a letter grade reduction on the final grade in addition to the loss of points for missing work. No assignments will be accepted after midnight on Sunday night, the last day of class. There are no extensions beyond the final day of class and receiving an incomplete is not an option in a fully online course.

While there are due dates for weekly assignments, you are welcome to post your work earlier in the week. **In our discussions, late work means that others may not have the opportunity to respond to your comments.** It also means that you will not have the benefit of as much interaction with other students as you will have if your assignment is posted on time. If you know you will be away on the day your assignment is due, please post your work before you leave.

Assignments will be considered late if posted after midnight Pacific Standard Time on the day they are due.

ACADEMIC HONESTY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. As explained in the university catalog, academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the result of another person's creativity and effort. Violations of university academic honesty include cheating, plagiarism, falsification, aiding the academic dishonesty of others, or malicious misuse of university resources. An instructor who believes a situation involving academic dishonesty has been detected may assign a failing grade for a) that particular assignment or examination, and/or b) the course following the procedure in the university catalog. Students may appeal using the procedure in the university catalog. See [Academic Policies](#) for further information.

ACADEMIC ACCOMMODATIONS

While all students are expected to meet the minimum academic standards for completion of this course as established by the instructor, students with disabilities may request academic accommodations. At PLNU, students must request academic accommodations by filing documentation with the [Disability Resource Center](#) (DRC) located in the Bond Academic Center. Once the student files documentation, the Disability Resource Center will contact the student's instructors and provide written recommendations for reasonable and appropriate accommodations to meet the individual needs of the student.

SPIRITUAL CARE

PLNU strives to be a place where you grow as a whole person. To this end, we provide resources for our graduate students to encounter God and grow in their Christian faith. You'll find faith integration activities throughout this course. In addition, there are resources for your Christian faith journey available on the [Graduate Student Life](#) web page.

USE OF TECHNOLOGY

In order to be successful in the online environment, you'll need to meet the minimum technology and system requirements; please refer to the [Technology and System Requirements](#).

Problems with technology do not relieve you of the responsibility of participating, turning in your assignments, or completing your class work.