



Department of Biology

BIO1006 -Global Health and Pathogens

4 Units

Fall 2025 | Quad II

Online

October 21 - December 12

Meeting Days/Times: Online Asynchronous

Optional Zoom Monday from 6 - 7 pm

Meeting Location: Online Asynchronous

Instructor: Dr. Paul Silva

Email: psilva@pointloma.edu

The best way to communicate with me is by Email!

Office Hours: Zoom, Monday 7-8 pm by appointment

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.

General Education Mission

PLNU provides a foundational course of study in the liberal arts informed by the life, death, and resurrection of Jesus Christ. In keeping with the Wesleyan tradition, the curriculum equips students with a broad range of knowledge and skills within and across disciplines to enrich major study, lifelong learning, and vocational service as Christ-like participants in the world's diverse societies and cultures.

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 the challenges of fighting pathogens on a global level. The course approach emphasizes critical thinking, active learning, social relevance, and building connections between case studies and general concepts of biology. Online.

Course Learning Outcomes

The following student learning outcomes will be achieved by this course; Students 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.
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General Education Learning Outcomes

1. Students will be able to examine, critique, and synthesize information to arrive at reasoned conclusions. (Critical Thinking, 1d).
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Institutional Learning Outcomes

1. **Learning, Informed by our Faith in Christ**
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, in a Christ-centered Faith Community**
Students will develop a deeper and more informed understanding of others as they negotiate complex professional, environmental, and social contexts.
 3. **Serving, in a Context of Christian Faith**
Students will serve locally and/or globally in vocational and social settings.
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Required Texts and Recommended Study Resources

1. Forgotten People, Forgotten Diseases: The Neglected Tropical Diseases and their Impact on Global Health and Development, 3rd. ed, Peter J. Hotez
 - ISBN: 978-1683673897
2. Twelve Diseases that Changed our World, Irwin W. Sherman
 - ISBN 978-1555814663
3. Spillover: Animal Infections and the Next Human Pandemic, David Quammen
 - ISBN 978-0393066807

Other selected readings will be provided as PDF files.

Note: The first 3 books are available as new or used.

Note: Students are responsible for having the required textbooks prior to the first day of class. Students are also encouraged to begin reading the books in preparation for the class as soon as possible.

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law. All supplemental materials posted on this course site (including articles, book excerpts, or other documents) are provided for your personal academic use. These materials may be protected by copyright law and should not be duplicated or distributed without permission of the copyright owner.

Course 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 4-unit class delivered over 8 weeks. It is anticipated that students will spend a minimum of 37.5 participation hours per credit hour on their coursework. For this course, students will spend an estimated 150 total hours meeting the course learning outcomes. The time estimations are provided in the Canvas modules.

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

Assessment and Grading

Weighted Grades

This course uses weighted grades. Each assignment category is worth a certain percentage of the total grade (100%) for the course, as specified in the table below:

Course Assignments	
Assignment Type	Total Time to Complete (%)
Discussion and Responses	25
Individual Assignments and Group Assignments	30
Quizzes	10
Final Exam	20
Final Project	15
Total	100

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.

Grading Scale

The following grading scale will be used for all exams and final course grades:

- 93-100% = A
- 90 - 92% = A-
- 87 – 89% = B+
- 83 – 86% = B
- 80 – 82% = B-
- 77 – 79% = C+
- 73 – 76% = C
- 70 – 72% = C-
- 67 – 69% = D+
- 63 – 66% = D
- 60 – 62% = D-
- Less than 59% = F

Course Requirements

Notes on Group Assignments: Since the class is so short, students will be assigned into groups of 4-5 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

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.)

2. Individual Assignments

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.

3. Collaborative Group Assignments and Evaluation

Due to the complex nature of some of the readings, these assignments are designed so that a group of 4-5 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.

4. Quizzes There are 5 quizzes to test your understanding of some of the readings, and each quiz is worth 20 points.

5. Final Exam

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 student must do a proper room scan with a mirror to show their computer, and they must show that they are powering off their phone and putting it aside.

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

6. Final Project

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.

Final Examination Policy

Successful completion of this class requires taking the final examination on its scheduled day. The final examination schedule is posted on the [Traditional Undergraduate Records: Final Exam Schedules](#) site. If you find yourself scheduled for three (3) or more final examinations on the same day, you are authorized to contact each professor to arrange a different time for **one** of those exams. However, unless you have three (3) or more exams on the same day, no requests for alternative final examinations will be granted.

Incompletes 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 would 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.

PLNU Spiritual Care

Please be aware that PLNU strives to be a place where you grow as a whole person. To this end, we provide resources for our students to encounter God and grow in their Christian faith.

If you have questions, prayer requests, or a desire to meet with the chaplain, you can contact your professor or the [Office of Spiritual Life and Formation](#).

State Authorization

State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on [State Authorization](#) to view which states allow distance education outside of California.

PLNU Copyright Policy

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU Recording Notification

In order to enhance the learning experience, please be advised that this course may be recorded by the professor for educational purposes, and access to these recordings will be limited to enrolled students and authorized personnel.

Note that all recordings are subject to copyright protection. Any unauthorized distribution or publication of these recordings without written approval from the University (refer to the Dean) is strictly prohibited.

PLNU Academic Honesty Policy

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when, in reality, they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination or, depending on the seriousness of the offense, for the course.

For all student appeals, faculty and students should follow the procedures outlined in the University Catalog. See [Academic Policies](#) for definitions of kinds of academic dishonesty and for further policy information.

During the first week of class, you will be asked to submit an Academic Honesty Verification Statement. Submitting the statement is a requirement of this course. By submitting the Academic Honesty Verification Statement, you will be verifying all assignments completed in this course were completed by you. Carefully review the Academic Honesty Statement below.

Statement: "In submitting this form, I am verifying all the assignments in this course will be completed by me and will be my own work."

Artificial Intelligence (AI) Policy

You are allowed to use Artificial Intelligence (AI) tools (e.g., ChatGPT, Gemini Pro 1.5, GrammarlyGo, Perplexity, etc) to generate ideas, but you are not allowed to use AI tools to generate content (text, video, audio, images) that will end up in any work submitted to be graded for this course. If you have any doubts about using AI, please gain permission from the instructor.

PLNU Academic Accommodations Policy

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities in accordance with the Americans with Disabilities Act (ADA). Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will work with the student to create an Accommodation Plan (AP) that outlines allowed accommodations. The EAC makes accommodations available to professors at the student's request.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course. Accommodations are not retroactive, so clarifying with the professor at the outset is one of the best ways to promote positive academic outcomes.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to ensure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC. Students cannot assume that because they had accommodations in the past, their eligibility at PLNU is automatic. All determinations at PLNU must go through the EAC process. This is to protect the privacy of students with disabilities who may not want to disclose this information and are not asking for any special accommodations.

Language and Belonging

Point Loma Nazarene University faculty are committed to helping create a safe and hospitable learning environment for all students. As Christian scholars, we are keenly aware of the power of language and believe in treating others with dignity. As such, it is important that our language be equitable, inclusive, and prejudice-free. Inclusive/Bias-free language is the standard outlined by all major academic style guides, including MLA, APA, and Chicago, and it is the expected norm in university-level work. Good writing and speaking do not use unsubstantiated or irrelevant generalizations about personal qualities such as age, disability, economic class, ethnicity, marital status, parentage, political or religious beliefs, race, gender, sex, or sexual orientation. Inclusive language also avoids using stereotypes or terminology that demeans persons or groups based on age, disability, class, ethnicity, gender, race, language, or national origin. Respectful use of language is particularly important when referring to those outside of the religious and lifestyle commitments of those in the PLNU community. By working toward precision and clarity of language, we mark ourselves as serious and respectful scholars, and we model the Christ-like quality of hospitality.

If you (or someone you know) have experienced other forms of discrimination, you can find more information on reporting and resources at the [PLNU Nondiscrimination webpage](#).

If you (or someone you know) have experienced a bias incident regarding language, you can find more information on reporting and resources at [PLNU Bias webpage](#).

Sexual Misconduct and Discrimination

Point Loma Nazarene University faculty are committed to helping create a safe learning environment for all students. If you (or someone you know) has experienced any form of sexual discrimination or misconduct, including sexual assault, dating or domestic violence, or stalking, know that help and support are available through the [Title IX Office](#). Please be aware that under Title IX of the Education Amendments of 1972, it is required to disclose information about such misconduct to the Title IX Office.

If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact Counseling Services at counselingservices@pointloma.edu or find a list of campus pastors via our [Sexual Harassment and Discrimination Policy](#).

If you (or someone you know) has experienced other forms of discrimination or bias, you can find more information on reporting and resources via our [Nondiscrimination and Anti-harassment Policy](#).

PLNU Attendance and Participation Policy

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. Therefore, regular attendance and participation in each course are minimal requirements.

If the student is absent for more than 10 percent of class sessions, the faculty member will issue a written warning of de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university withdrawal date or, after that date, receive an “F” grade.

Students who anticipate being absent for an entire week of a course should contact the instructor in advance for approval and make arrangements to complete the required coursework and/or alternative assignments assigned at the discretion of the instructor. Acceptance of late work is at the discretion of the instructor and does not waive attendance requirements.

Refer to [Academic Policies](#)[Links to an external site.](#) for additional details.

Synchronous Attendance/Participation Definition

For synchronous courses that have specific scheduled meeting times (including in-person, hybrid, and synchronous online courses), absences are counted from the first official meeting of the class regardless of the date of the student’s enrollment. For courses with specific attendance requirements, those requirements are outlined in the course syllabus.

Note: For synchronous courses with an online asynchronous week, refer to the Online Asynchronous Class Attendance policy listed below.

Online Asynchronous Attendance/Participation Definition

Students taking online courses with no specific scheduled meeting times are expected to actively engage throughout each week of the course. Attendance is defined as participating in an academic activity within the online classroom, which includes, but is not limited to:

- Engaging in an online discussion
- Submitting an assignment
- Taking an exam
- Participating in online labs
- Initiating contact with a faculty member within the learning management system to discuss course content

Note: Logging into the course does not qualify as participation and will not be counted as meeting the attendance requirement.

Course Modality Definitions

1. Online Courses: These are courses with class meetings where all instruction and interaction are fully online.
 1. Synchronous Courses: At least one class meeting takes place at a designated time.
 2. Asynchronous Courses: All class meetings are asynchronous.
2. Hybrid Courses: These are courses with class meetings that take place both in the classroom and online synchronously and/or asynchronously.
3. In-Person Courses: These are courses that meet in person with the instructor and students in a physical classroom setting. With approval by the area dean, this may include up to 25% of qualified class interactions through a Learning Management System (such as Canvas).

Use of Technology

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

are required to have headphone speakers, a microphone, or webcams compatible with their computer available to use. Please note that any course with online proctored exams requires a computer with a camera (tablets are not compatible or allowable) to complete exams online.

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

Loma Writing Center

The Loma Writing Center exists to help all members of the PLNU community cultivate transferable writing skills to engage their academic, professional, personal, and spiritual communities. We work toward this goal by conducting one-on-one consultation sessions, supporting writing education across the PLNU community, and participating in ongoing writing center research.

Getting feedback from the Loma Writing Center while you're in the process of working on an assignment is a great way to improve the quality of your writing and develop as a writer. You are encouraged to talk with a trained writing consultant about getting started on an assignment, organizing your ideas, finding and citing sources, revising, editing for grammar polishing final drafts, and more. For information about how to make in-person or online appointments, see [Loma Writing Center webpage](#) or visit the Loma Writer Center on the first floor of the Ryan Library, room 221.

- [Appointment Calendar](#)
 - [Website](#)
 - Email: writingcenter@pointloma.edu
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Lomabooks Instructions for Students

***Note:** For courses using materials available through Lomabooks*

This course is part of our course material delivery program, **LomaBooks**. The bookstore will provide each student with a convenient package containing all required physical materials; all digitally delivered materials will be integrated into Canvas.

You should have received an email from the bookstore confirming the list of materials that will be provided for each of your courses and asking you to select how you would like to receive any printed components (in-store pickup or home delivery). If you have not done so already, please confirm your fulfillment preference so the bookstore can prepare your materials.

For more information about **LomaBooks**, please go to [the LomaBooks site](#).

Assignments-at-a-Glance

The course summary below lists our assignments and their due dates. Click on any assignment to review it.