

Course Syllabus

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Department of Biology
BIO1006 -Global Health and Pathogens
4 Units

Summer 2024 | Session I

Fully Online

May 6 - June 7

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 6 - 7 pm

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 the challenges of 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.
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FOUNDATIONAL EXPERIENCE 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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COURSE LEARNING OUTCOMES (CLO's)

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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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 **5 weeks**. It is anticipated that students will spend a minimum of 37.5 participation hours per credit hour on their coursework. 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

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.

ASSESSMENT AND GRADING

Your grades will be posted in the Canvas grade book no later than **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 (25%)**



2. **Individual Assignments** and Group Assignments (30%)
3. **Quizzes** (10%)
4. **Final Exam** (20%)
5. **Final Project** (15%)

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	

COURSE REQUIREMENTS

Notes on Group Assignments: Since the class is so short, students will be assigned into groups of 4 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 four 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 [Class Schedules](http://www.pointloma.edu/experience/academics/class-schedules) (<http://www.pointloma.edu/experience/academics/class-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.



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](#) (<https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures>) to view which states allow online (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 ATTENDANCE AND PARTICIPATION POLICY

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. 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 drop date or, after that date, receive an "F" grade.

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.

In some courses, a portion of the credit hour content will be delivered **asynchronously** and attendance will be determined by submitting the assignments by the posted due dates. See [Academic Policies](#) (https://catalog.pointloma.edu/content.php?catoid=52&navoid=2919#Academic_Honesty) in the Undergraduate Academic Catalog. If absences exceed these limits but are due to university-excused health issues, an exception will be granted.

COURSE MODALITY DEFINITIONS

1. **In-Person:** Course meetings are face-to-face with no more than 25% online delivery.
2. **Online:** Coursework is completed 100% online and asynchronously.



3. **Online Synchronous:** Coursework is completed 100% online with required weekly online class meetings.
4. **Hybrid:** Courses that meet face-to-face with required online components.

Asynchronous Attendance/Participation Definition

A day of attendance in asynchronous content is determined as contributing a substantive note, assignment, discussion, or submission by the posted due date. Failure to meet these standards will result in an absence for that day. Instructors will determine how many asynchronous attendance days are required each week.

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.

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. Faculty should follow and students may appeal using the procedure in the university Catalog.

See [Academic Policies \(https://catalog.pointloma.edu/content.php?catoid=52&navoid=2919#Academic_Honesty\)](https://catalog.pointloma.edu/content.php?catoid=52&navoid=2919#Academic_Honesty) for definitions of kinds of academic dishonesty and for

further policy information.



PLNU ACADEMIC ACCOMMODATIONS POLICY

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities. Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu (<mailto:EAC@pointloma.edu>) or 619-849-2486). Once a student's eligibility for accommodation has been determined, the EAC will issue an academic accommodation plan ("AP") to all faculty who teach courses in which the student is enrolled each semester.

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 and/or if they do not wish to utilize some or all of the elements of their AP in that course.

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.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that course. PLNU highly recommends that DRC students speak with their professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

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 students have questions, a desire to meet with the chaplain, or have prayer requests you can contact the [Office of Spiritual Development](#).

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.

You may report an incident(s) using the [Bias Incident Reporting Form](https://cm.maxient.com/reportingform.php?PointLoma&layout_id=5)  (https://cm.maxient.com/reportingform.php?PointLoma&layout_id=5).

SEXUAL MISCONDUCT AND DISCRIMINATION

In support of a safe learning environment, if you (or someone you know) have experienced any form of sexual discrimination or misconduct, including sexual assault, dating or domestic violence, or stalking, know that accommodations and resources are available through the Title IX Office at pointloma.edu/Title-IX (<http://pointloma.edu/Title-IX>). Please be aware that under Title IX of the Education Amendments of 1972, faculty and staff are 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 (<mailto:counselingservices@pointloma.edu>) or find a list of campus pastors at pointloma.edu/title-ix (<http://pointloma.edu/title-ix>).

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](https://help.pointloma.edu/TDClient/1808/Portal/KB/ArticleDet?ID=108349) (<https://help.pointloma.edu/TDClient/1808/Portal/KB/ArticleDet?ID=108349>) information. Additionally, students are required to have headphone speakers, 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) 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.












ARTIFICIAL INTELLIGENCE (AI) POLICY


















Use of Artificial Intelligence (AI) tools (e.g., ChatGPT, iA Writer, Marmot, Botowski) is not permitted, and the use of these tools will be treated as plagiarism.

ASSIGNMENTS AT-A-GLANCE















Course Summary:















Date	Details	Due
	 BIO1006-1 SU21 - Global Health and Pathogens - Optional Review Session/Office hours (https://canvas.pointloma.edu/calendar?event_id=155826&include_contexts=course_73314)	6pm to 7pm
	 BIO1006-1 SU24 - Global Health And Pathogens (Optional Class Meetings 6-7pm) (https://canvas.pointloma.edu/calendar?event_id=155837&include_contexts=course_73314)	6pm to 7pm
Mon May 6, 2024	 WK1 Introduce Yourself (https://canvas.pointloma.edu/courses/73314/assignments/1037802) 	due by 11:59pm
	 Academic Honesty Verification Statement (https://canvas.pointloma.edu/courses/73314/assignments/1037793) 	due by 11:59pm
	 Week 1 Overview	to do: 11:59pm
	 WK1 Optional Class Meeting (Monday 6:00-7:00 pm)	to do: 11:59pm
Tue May 7, 2024	 WK1 Leading Causes of Death (M1A1) (https://canvas.pointloma.edu/courses/73314/assignments/1037819) 	due by 11:59pm
Wed May 8, 2024	 WK1 Leading Causes of Death (M1D1) Discussion	due by 11:59pm




















Date	Details	Due
	https://canvas.pointloma.edu/courses/73314/assignments/1037803 	
	 WK1 Acute Respiratory Infections and Diarrheal Diseases (M1A2) (Group Assignment) https://canvas.pointloma.edu/courses/73314/assignments/1037813 	due by 11:59pm
	 WK1 Neglected Tropical Diseases (M1A4) https://canvas.pointloma.edu/courses/73314/assignments/1037812 	due by 11:59pm
Thu May 9, 2024	 WK1 DALY (M1A3) https://canvas.pointloma.edu/courses/73314/assignments/1037814 	due by 11:59pm
	 WK1 NTDs (M1D2) Discussion https://canvas.pointloma.edu/courses/73314/assignments/1037808 	due by 11:59pm
Fri May 10, 2024	 WK1 Life Application 1 (M1LA1) Discussion https://canvas.pointloma.edu/courses/73314/assignments/1037809 	due by 11:59pm
	 WK1 Summative Quiz (M1Q1) https://canvas.pointloma.edu/courses/73314/assignments/1037790 	due by 11:59pm
Sat May 11, 2024		
Mon May 13, 2024	 BIO1006-1 SU21 - Global Health and Pathogens - Optional Review Session/Office hours https://canvas.pointloma.edu/calendar?event_id=155827&include_contexts=course_73314	6pm to 7pm
	 BIO1006-1 SU24 - Global Health And Pathogens (Optional Class Meetings 6-7pm) https://canvas.pointloma.edu/calendar?event_id=155838&include_contexts=course_73314	6pm to 7pm

















Date	Details	Due
	 Week 2 Overview	to do: 11:59pm
	 WK2 Optional Class Meeting (Monday 6:00-7:00 pm)	to do: 11:59pm
Tue May 14, 2024	 WK2 Pathogens (M2A1) https://canvas.pointloma.edu/courses/73314/assignments/1037817 	due by 11:59pm
Wed May 15, 2024	 WK2 Vaccine Trials (M2D1) Discussion https://canvas.pointloma.edu/courses/73314/assignments/1037801 	due by 11:59pm
Thu May 16, 2024	 WK2 Parasites - Soil-transmitted Helminths (M2A3) https://canvas.pointloma.edu/courses/73314/assignments/1037818 	due by 11:59pm
	 WK2 Viruses - Ebola Virus (M2A2) (Group Assignment) https://canvas.pointloma.edu/courses/73314/assignments/1037819 	due by 11:59pm
Fri May 17, 2024	 WK2 Life Application 2 (M2LA2) Discussion https://canvas.pointloma.edu/courses/73314/assignments/1037810 	due by 11:59pm
	 WK2 The Great Ape Gamble (M2D2) Discussion https://canvas.pointloma.edu/courses/73314/assignments/1037804 	due by 11:59pm
Sat May 18, 2024	 WK2 Summative Quiz (M2Q2) https://canvas.pointloma.edu/courses/73314/assignments/1037791 	due by 11:59pm
Mon May 20, 2024	 BIO1006-1 SU21 - Global Health and Pathogens - Optional Review Session/Office hours	6pm to 7pm 







Date	Details	Due
	https://canvas.pointloma.edu/calendar?event_id=155828&include_contexts=course_73314	
	 BIO1006-1 SU24 - Global Health And Pathogens (Optional Class Meetings 6-7pm) https://canvas.pointloma.edu/calendar?event_id=155839&include_contexts=course_73314	6pm to 7pm
	 Week 3 Overview	to do: 11:59pm
	 WK3 Optional Class Meeting (Monday 6:00-7:00 pm)	to do: 11:59pm
	 WK3 Final Project Presentation Sign-Up https://canvas.pointloma.edu/courses/73314/assignments/1037797	due by 11:59pm
		
Tue May 21, 2024	 WK3 Lesson on Innate Immunity	to do: 11:59pm
	 WK3 Innate Immunity (M3Q3) Quiz https://canvas.pointloma.edu/courses/73314/assignments/1037792	due by 11:59pm
		
Wed May 22, 2024	 WK3 Quiz on Adaptive Immunity (M3Q4) https://canvas.pointloma.edu/courses/73314/assignments/1037796	due by 11:59pm
		
	 WK3 Lesson on Adaptive Immunity	to do: 11:59pm
Fri May 24, 2024	 WK3 Immune System Analogy (M3D1) Discussion https://canvas.pointloma.edu/courses/73314/assignments/1037800	due by 11:59pm
		
	 WK3 Life Application 3 (M3LA3) Discussion	due by 11:59pm



Date	Details	Due
	https://canvas.pointloma.edu/courses/73314/assignments/1037805 	
Sun May 26, 2024	 WK3 Mid-Course Survey https://canvas.pointloma.edu/courses/73314/assignments/1037788 	due by 11:59pm
	 BIO1006-1 SU24 - Global Health And Pathogens (Optional Class Meeting 6-7pm) https://canvas.pointloma.edu/calendar?event_id=155842&include_contexts=course_73314	6pm to 7pm
	 Week 4 Overview	to do: 11:59pm
Tue May 28, 2024	 Wk4 Lesson on Vaccines (M4Q)	to do: 11:59pm
	 WK4 Optional Class Meeting (Tuesday 6:00-7:00 pm)	to do: 11:59pm
	 WK4 Global Pandemic (M4D1) Discussion https://canvas.pointloma.edu/courses/73314/assignments/1037799 	due by 11:59pm
Wed May 29, 2024	 WK4 Quiz on Vaccines (M4Q5) https://canvas.pointloma.edu/courses/73314/assignments/1037794 	due by 11:59pm
	 WK4 Influenza virus (M4A1) (Group Assignment) https://canvas.pointloma.edu/courses/73314/assignments/1037819 	due by 11:59pm
Thu May 30, 2024	 WK4 Smallpox (M4A2) https://canvas.pointloma.edu/courses/73314/assignments/1037820 	due by 11:59pm
Fri May 31, 2024	 WK4 Life Application 4 (M4LA4) Discussion	due by 

Date	Details	Due
	https://canvas.pointloma.edu/courses/73314/assignments/1037806 	
	 BIO1006-1 SU21 - Global Health and Pathogens - Optional Review Session/Office hours https://canvas.pointloma.edu/calendar?event_id=155829&include_contexts=course_73314	6pm to 7pm
	 BIO1006-1 SU24 - Global Health And Pathogens (Optional Class Meetings 6-7pm) https://canvas.pointloma.edu/calendar?event_id=155841&include_contexts=course_73314	6pm to 7pm
Mon Jun 3, 2024	 Week 5 Overview	to do: 11:59pm
	 WK5 Optional Class Meeting (Monday 6:00-7:00 pm)	to do: 11:59pm
	 WK5 Preparation for the Final Exam	to do: 11:59pm
	 WK5 Immune Response to HIV (M5A1) https://canvas.pointloma.edu/courses/73314/assignments/1037822 	due by 11:59pm
Tue Jun 4, 2024	 WK5 Genetic Engineering of Mosquitos (M5D2) Discussion https://canvas.pointloma.edu/courses/73314/assignments/1037807 	due by 11:59pm
Wed Jun 5, 2024	 WK5 HIV Vaccine (M5D1) Discussion https://canvas.pointloma.edu/courses/73314/assignments/1037798 	due by 11:59pm
Thu Jun 6, 2024	 WK5 Malaria (M5A2) (Group Assignment) https://canvas.pointloma.edu/courses/73314/assignments/1037823 	due by 11:59pm



Date	Details	Due
Fri Jun 7, 2024	 WK5 Final Exam (https://canvas.pointloma.edu/courses/73314/assignments/1037789) 	due by 11:59pm
Fri Jun 7, 2024	 WK5 Final Project (Group Assignment) (https://canvas.pointloma.edu/courses/73314/assignments/1037821) 	due by 11:59pm
Fri Jun 7, 2024	 WK5 Group Member Evaluation (https://canvas.pointloma.edu/courses/73314/assignments/1037795) 	due by 11:59pm

