

	Department of Physics and Engineering PHY1044/1044L General Physics I and Lab 3 + 1 Units MWF 7:25–8:20 AM Latter Hall 101 Final Exam : December 16, 7:30–10:00 AM
Fall 2022 : August 30- December 16	

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Office hours	By Appointment in Zoom

## 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 is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

### Department Mission

The Physics and Engineering Department at PLNU provides strong programs of study in the fields of Physics and Engineering. Our students are well prepared for graduate studies and careers in scientific and engineering fields. We emphasize a collaborative learning environment which allows students to thrive academically, build personal confidence, and develop interpersonal skills. We provide a Christian environment for students to learn values and judgment, and pursue integration of modern scientific knowledge and Christian faith.

## Course Description

A general introduction to physics including mechanics, thermodynamics, waves and sound. The course is taught primarily at the algebra/trigonometry level but does require limited use of calculus. Meets the professional requirements of life and medical science majors. Lecture and laboratory. Not repeatable. Letter grading.

## Foundational Exploration

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 Learning Outcomes

1. students will be able to translate the description of physics problems into the mathematical equations required to solve them using relevant physical principles.
2. students will be able to calculate solutions to physics problems once appropriate equations or techniques are identified.
3. students will be able to predict reasonable answers in appropriate problems, and assess the reasonableness of calculated answers
4. students will be able to explain the physical meaning of the parameters in introductory physics equations
5. students will be able to create and interpret graphical representations of physical quantities (motion graphs, vectors, standing waves, etc.)
6. students will be able to gather and interpret data in a lab setting
7. students will be able to work productively in groups

## Required Texts And Recommended Study Resources

- *Physics : Principles with Applications* by Douglas Giancoli, 7th edition
- Access to ExpertTA
- A scientific calculator

## 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 fifteen weeks. Specific details about how the class meets the credit hour requirement can be provided upon request. (Based on 37.5 hours of student engagement per credit hour.)

### Distribution of Student Learning Hours

Category	Time Expectation in Hours
Labs	42
Reading/Online Video Assignments	39
Homework Assignments	54
Other Assignments & Learning Activities	11
Exams	4
Total Hours	150

## Assessment and Grading

### Graded Components

- **Lab:** Provides hands on applications of the physics we are learning in lecture. There is a focus on conceptual understanding as well as data collection and analysis. The labs this semester are designed with flexibility to collect data and collectively compile data, discuss and fix trouble spots in small groups. **You must pass the lab component of the course in order to pass the class.**
- **Homework:** Practicing working physics problems is critical to your success in the class. Each week there will be homework set due through Expert TA.
- **Examinations and the Final Examination:** Examinations and the final examination will include problems and questions over material assigned in the text, videos, homework, and material presented in class. No examination shall be missed without prior consent or a well-documented emergency beyond your control. A score of zero will be assigned for an examination that is missed without prior consent or a well-documented emergency beyond your control.
- **Late work will not be accepted without prior consent or a well-documented emergency. Up to a maximum of one homework assignment will be accepted up to 3 days late provided that consent is received from the professor before it is due. Homework assignments that are submitted late without prior consent will be recorded with a score of zero.** If more than half of the homework assignments are submitted on time, then the lowest homework score will be dropped from the calculations of the homework grade. The examination schedule is included in the schedule and will be followed.

## Grading Scale

Grading Distribution	Percent
Exams	30
Final Exam	20
Labs	25
Homework	20
In-Class Questions	5
Total	100

.Approximate minimal percentages required to obtain a given grade are:

Standard Grade Scale Based on Percentages					
	A	B	C	D	F
+		87.5 – 90	77.5–80	67.5–70	
	92.5–100	82.5–87.5	72.5–77.5	62.5–67.5	0–60
-	90–92.5	80–82.5	70–72.5	60–62.5	

## Course Calendar

Week	Date	Topic	Text	Lab
1	29 August	Kinematics	1–2	No Lab
2	5 September	2D Motion	3	Motion(1)
	5 September	Labor Day	<i>No class</i>	
3	12 September	Newton's Laws	4	Free Fall(2)
4	19 September	Circular Motion	5	Forces(3)
	23 September	Exam #1	1–5	
5	26 September	Work & Energy	6	Circular Motion(4)
6	3 October	Momentum	7	Energy(5)
7	10 October	Angular Motion	8	Circular Motion(6)
8	17 October	Statics	9	Rotation Combined(7)
	19 October	Exam #2	6–8	
	21 September	Fall Break	<i>No class</i>	
9	24 October	Fluids	10	Equilibrium(8)
10	31 October	Waves & Harmonic Motion	11	Fluids & buoyancy (10)
11	7 November	Sound	12	SHM (11)
	11 November	Exam #3	9–12	
12	14 November	Temperature	13	Straw Music (12)
	21 November	Thanksgiving	<i>No class 23–25</i>	
13	28 November	Heat	14	Ideal Gas (13)
14	5 December	Thermo Laws	15	Thermo (14)
	16 December	Final Exam	7:30–10:00 AM	

## **Final Exam: Date and Time:**

The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor. This schedule can be found on the university website and in the course calendar. No requests for early examinations will be approved. Only in the case that a student is required to take three exams during the same day of finals week, is an instructor authorized to consider changing the exam date and time for that particular student.

## **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 online (distance education) outside of California.

## **Incompletes and Late Assignments**

All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Incompletes will only be assigned in extremely unusual circumstances.

## **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 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 to an external site. 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 or 619-849-2486). Once a student's eligibility for an 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 assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC.

## **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) have 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 at pointloma.edu/Title-IX. 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 counseling@pointloma.edu or find a list of campus pastors at pointloma.edu/title-ix

## **PLNU Attendance and Participation Policy**

Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day.

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in 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 the appropriate grade for their work and participation. See Academic Policies to an external site. for further information about class attendance.

### **Class Enrollment:**

It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

## Spiritual Care

Please be aware PLNU strives to be a place where you grow as whole persons. 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 to an external site.