PLNU	**Department of Physics and Engineering** **PHY1044/1044L General Physics I and Lab** **3 +1 Units**
Spring 2021 | J Term Course | January 11 - February 13	

Lecture: MWF 10:00-10:50 **Lab:** MWF 11:00-11:50 **Meeting:** Via Zoom
Instructor: Dr. Paul D. Schmelzenbach
Phone: 619.849.2933
Email: paulschmelzenbach@pointloma.edu
Office hours: By appointment as needed.

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.

COURSE LEARNING OUTCOMES

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 culture.

This course is one of the components of the General Education Program at Point Loma Nazarene University, in support of the general education learning outcome: Quantitative Reasoning: Students will be able to solve problems that are quantitative in nature. The purpose of general education is to provide a common educational experience, to develop essential skills, and to provide a broad cultural background for personal and professional growth.
Within these broader goals, this course develops students skills so they will be able to:

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

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

- Physics by Douglas Giancoli, 7th edition
- a 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 five weeks. (Based on 37.5 hours of student engagement per credit hour.)

Distribution of Student Learning Hours	
Category	**Time Expectation in Hours**
Zoom meetings	15
Reading Assignments	44
Homework Assignments	42
Labs	40
Quizzes and Exams	9
Total Hours	150

ASSESSMENT AND GRADING

Student 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 comments posted in the grade book as these comments are intended to help students improve their work. Final grades will be posted within one week of the end of the class. Grades will be based on the following:

(5%) Physics Lesson

(2%) Participation in Zoom - Either 10:00 or 11:30 group.

(23%) Lab Due most MWF

(20%) Homework: Expert TA question due most days

(30%) 3 Exams: Expert TA - 2 hour exam

(20%) Final exam: Zoom - set at final time 10-1

Standard Grade Scale Based on Percentages				
A	**B**	**C**	**D**	**F**
A 93-100	B+ 87-89	C+ 77-79	D+ 67-69	F Less than 59
A- 90-92	B 83-86	C 73-76	D 63-66	
	B- 80-82	C- 70-72	D- 60-62	

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.

EXAMS

Examinations and the Final Examination will include problems and questions over material assigned in the text, readings and handouts, as well as 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. Exams through the semester will be administered using Honorlock.

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 th 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.

INCOMPLETES AND LATE ASSIGNMENTS

All assignments and exams must be turned in on time to receive credit. **Late work will not be accepted** without prior consent or a well-documented emergency. 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 for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICY

While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center. (DRC@pointloma.edu or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 (a) prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

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.

PLNU ATTENDANCE AND PARTICIPATION POLICY

Regular and punctual attendance at all **synchronous** class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions (virtual or face-to-face), 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 the appropriate grade for their work and participation. 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 site. in the Undergraduate Academic Catalog. If absences exceed these limits but are due to university excused health issues, an exception will be granted.

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.

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.

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

USE OF TECHNOLOGY

Since most courses will have online components, 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* information. Additionally, students are required to have headphone speakers compatible with their computer available to use. If a student is in need of technological resources please contact student-tech-request@pointloma.edu

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

Date	Topic	Zoom	Video Lesson Due	Homework Due	Lab Due
M 1/11	Introductions Ch. 1	10 & 11:30	Lesson 1-1		Lab 1
T 1/12	1D Motion (Ch 2)		Lesson 1-2	Hmk 1-1	
W 1/13	2D Motion (Ch 3)	10 & 11:30	Lesson 1-3	Hmk 1-2	Lab 2

R 1/14	Forces 1 (Ch 4)		Lesson 1-4	Hmk 1-3	
F 1/15	Forces 2 (Ch 4)	10 & 11:30	Lesson 1-5	Hmk 1-4	Lab 3
T 1/19	Wrap up			Hmk 1-5	Lab 4
W 1/20	**Exam 1**; Circular Motion (Ch 5)	Exam from 10-12	Lesson 2-1		
R 1/21	Wrap up, Energy (Ch 5/6)		Lesson 2-2	Hmk 2-1	
F 1/22	Energy (Ch 6)	10 & 11:30	Lesson 2-3	Hmk 2-2	Lab 5
M 1/25	Momentum (Ch 7)	10 & 11:30	Lesson 2-4	Hmk 2-3	Lab 6
T 1/26	Momentum (Ch 7)		Lesson 2-5	Hmk 2-4	
W 1/27	Rotation (Ch 8)	10 & 11:30	Lesson 2-6	Hmk 2-5	Lab 7
R 1/28	Rotation (Ch 8)			Hmk 2-6	
F 1/29	**Exam 2**; Equil. (Ch 9)	Exam from 10-12	Lesson 3-1		
M 2/1	Fluids (Ch 10)	10 & 11:30	Lesson 3-2	Hmk 3-1	Lab 8
T 2/2	Oscillations (Ch 11)		Lesson 3-3	Hmk 3-2	
W 2/3	Waves (Ch 11)	10 & 11:30	Lesson 3-4	Hmk 3-3	Lab 9
R 2/4	Sound (Ch 12)		Lesson 3-5	Hmk 3-4	
F 2/5	Sound (Ch 12)	10 & 11:30		Hmk 3-5	Lab 10
M 2/8	**Exam 3**	Exam from 10-12	Lesson 4-1		
T 2/9	Ch 13		Lesson 4-2	Hmk 4-1	
W 2/10	Ch 14	10 & 11:30	Lesson 4-3	Hmk 4-2	Lab 11
R 2/11	first part of Ch 15		Lesson 4-4	Hmk 4-3	
F 2/12	**Final Exam**	10-1			