

Course Syllabus

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Department of Physics and Engineering
PHY1044/1044L General Physics I and Lab
3 +1 Units

Summer 2020 | Session 1

Instructor: Dr. Paul D. Schmelzenbach

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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
Online Participation in Discussions, Groups	11
Reading Assignments	68
Written Assignments	22
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 (Due 7 pm that day)

(5%) Participate in Physics Discussions (Question by 10 pm, answers by 10 am)

(20%) Lab Due at 10 am the next day; Submit html & data worksheet

(20%) Homework: Expert TA question due at 10 am the next day

(30%) 3 Exams: Expert TA - timed at 2.5 hours.

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

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 \(https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures\)](https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures) 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](http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278) [_\(http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278\)](http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278) 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 (<mailto: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

Students taking online courses are expected to attend each week of the course. Attendance is defined as participating in an academic activity within the online classroom which includes posting in a graded activity in the course. (Note: Logging into the course does not qualify as participation and will not be counted as meeting the attendance requirement.)

Students who do not attend at least once in any 3 consecutive days will be issued an attendance warning. Students who do not attend at least once in any 7 consecutive days will be dropped from the course retroactive to the last date of recorded attendance.

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](https://www.pointloma.edu/offices/spiritual-development) [_\(https://www.pointloma.edu/offices/spiritual-development\)](https://www.pointloma.edu/offices/spiritual-development)

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](#) information.
















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















ASSIGNMENTS AT-A-GLANCE

















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

Course Summary:




Date	Details
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Date	Details
Mon May 11, 2020	 Live Zoom Introduction - Day 1 (https://canvas.pointloma.edu/calendar?event_id=39816&include_contexts=course_50078) 10am to 10:30am
	 Day 1 Live Zoom Introduction 10:00 a.m. - 10:30 a.m. PST (https://canvas.pointloma.edu/courses/50078/assignments/490975) due by 10am
	 PHY1044-1 SU20 - General Physics I (https://canvas.pointloma.edu/calendar?event_id=40050&include_contexts=course_50078) 1pm to 2pm
	 Day 1 Ch.1 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490992) due by 7pm
	 Module 1 Overview to do: 11:59pm
Tue May 12, 2020	 Check in for lab/hmk questions (https://canvas.pointloma.edu/calendar?event_id=40135&include_contexts=course_50078) 8:30am to 9:30am
	 Day 1 HW1 (https://canvas.pointloma.edu/courses/50078/assignments/491010) due by 10am
	 Day 1 Lab Introductions and Experimental Error (https://canvas.pointloma.edu/courses/50078/assignments/490993) due by 10am
Wed May 13, 2020	 Day 2 Ch. 2 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490996) due by 7pm
	 Day 2 HW2 (https://canvas.pointloma.edu/courses/50078/assignments/491014) due by 10am
	 Day 2 Lab ID Motion (https://canvas.pointloma.edu/courses/50078/assignments/490997) due by 10am
Thu May 14, 2020	 Day 3 Ch. 3 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490998) due by 7pm
	 Day 3 HW3 (https://canvas.pointloma.edu/courses/50078/assignments/491015) due by 10am
	 Day 3 Lab Projectile Motion & Vectors (https://canvas.pointloma.edu/courses/50078/assignments/490999) due by 10am
	 Day 4 Ch. 4 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/491000) due by 7pm

Date	Details	
Mon May 18, 2020	 Day 4 HW4 (https://canvas.pointloma.edu/courses/50078/assignments/491016)	due by 10am
	 Day 5 Live Zoom Session Review 10:00 a.m. - 10:45 a.m. PST	to do: 10am
	 Day 5 Ch. 4 Forces Part 2 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/491001)	due by 7pm
Tue May 19, 2020	 Day 5 Lab Forces (https://canvas.pointloma.edu/courses/50078/assignments/491002)	due by 10am
	 Day 5 HW4b (https://canvas.pointloma.edu/courses/50078/assignments/491017)	due by 10am
	 Day 6 Exam 1 Chapters 1-4 (https://canvas.pointloma.edu/courses/50078/assignments/491003)	due by 10am
Wed May 20, 2020	 Day 7 Ch. 5 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/491004)	due by 7pm
	 Module 2 Overview	to do: 11:59pm
Thu May 21, 2020	 Day 7 Lab Circular Motion (https://canvas.pointloma.edu/courses/50078/assignments/491005)	due by 10am
	 Day 7 HW5 (https://canvas.pointloma.edu/courses/50078/assignments/491018)	due by 10am
	 Day 8 Ch. 6 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/491006)	due by 7pm
Fri May 22, 2020	 Day 8 Lab Conservation of Energy (https://canvas.pointloma.edu/courses/50078/assignments/491007)	due by 10am
	 Day 8 HW6 (https://canvas.pointloma.edu/courses/50078/assignments/491019)	due by 10am
	 Day 9 Ch. 7 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/491008)	due by 7pm

Date	Details	
Tue May 26, 2020	 Day 9 Lab Momentum (https://canvas.pointloma.edu/courses/50078/assignments/491009)	due by 10am
	 Day 9 HW7 (https://canvas.pointloma.edu/courses/50078/assignments/491020)	due by 10am
	 Day 10 Ch. 8 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490976)	due by 7pm
Wed May 27, 2020	 Day 10 Lab Angular Quantities (https://canvas.pointloma.edu/courses/50078/assignments/490977)	due by 10am
	 Day 10 HW8 (https://canvas.pointloma.edu/courses/50078/assignments/491021)	due by 10am
	 Day 11 Live Zoom Session Review 10:00 a.m. - 10:45 a.m. PST	to do: 10am
	 Day 11 Ch. 8 Part II Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490978)	due by 7pm
Thu May 28, 2020	 Day 11 HW8b (https://canvas.pointloma.edu/courses/50078/assignments/491011)	due by 10am
Mon Jun 1, 2020	 WK4 Live Zoom Session Review 10:00 a.m. - 10:45 a.m. PST	to do: 10am
	 Day 13 Ch. 9 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490980)	due by 7pm
Tue Jun 2, 2020	 Day 13 HW9 (https://canvas.pointloma.edu/courses/50078/assignments/491012)	due by 10am
	 Day 13 Lab Equilibrium (https://canvas.pointloma.edu/courses/50078/assignments/490981)	due by 10am
	 Day 14 Ch. 10 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490982)	due by 7pm
Wed Jun 3, 2020	 Day 14 HW10 (https://canvas.pointloma.edu/courses/50078/assignments/491013)	due by 10am
	 Day 14 Lab Fluids (https://canvas.pointloma.edu/courses/50078/assignments/490983)	due by 10am
	 Day 15 Ch. 11 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490984)	due by 7pm

Date	Details
Thu Jun 4, 2020	 Day 15 HW11 (https://canvas.pointloma.edu/courses/50078/assignments/491476) due by 10am
	 Day 15 Lab Oscillations (https://canvas.pointloma.edu/courses/50078/assignments/490985) due by 10am
	 Day 16 Ch. 12 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490986) due by 7pm
Mon Jun 8, 2020	 Day 16 Lab Sound (https://canvas.pointloma.edu/courses/50078/assignments/490987) due by 10am
	 Day 16 HW12 (https://canvas.pointloma.edu/courses/50078/assignments/491477) due by 10am
	 Day 17 Live Zoom Session Review 10:00 a.m. - 10: 45 a.m. PST to do: 10am
	 Day 17 Ch. 13 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490988) due by 7pm
Tue Jun 9, 2020	 Day 17 HW13 (https://canvas.pointloma.edu/courses/50078/assignments/491478) due by 10am
	 Day 12 Exam 2 Chapters 5-8 (https://canvas.pointloma.edu/courses/50078/assignments/490979) due by 11:59pm
	 Day 18 Exam 3 Chapters 9-13 (https://canvas.pointloma.edu/courses/50078/assignments/490989) due by 11:59pm
Wed Jun 10, 2020	 Day 19 Ch. 14 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490990) due by 11:59pm
Thu Jun 11, 2020	 Day 19 HW14 (https://canvas.pointloma.edu/courses/50078/assignments/491479) due by 10am
	 Day 19 Lab Heat (https://canvas.pointloma.edu/courses/50078/assignments/490991) due by 10am
	 Day 20 Live Zoom Session Review for Final 10:00 a.m. - 10:45 a.m. PST to do: 10am
	 Day 20 Ch. 15 Physics Lesson (https://canvas.pointloma.edu/courses/50078/assignments/490994) due by 11:59pm

Date	Details
Fri Jun 12, 2020	 Day 20 HW15 (https://canvas.pointloma.edu/courses/50078/assignments/491480) due by 10am
	 Day 20 Lab Thermodynamic Processes (https://canvas.pointloma.edu/courses/50078/assignments/490995) due by 10am
	 Day 21 Final Exam (https://canvas.pointloma.edu/courses/50078/assignments/490974)