POINT 1902 LOMA
NAZARENE UNIVERSITY

Physics and Engineering/STEM

PSC 1012 Physics for Teachers

Two Units

Fall 2025

Meeting days/times (e.g., MWF 1:30 pm – 2:35 pm)

Meeting location (e.g., Latter 102)

Final Exam: (Friday, 10/17, 1:30 – 2:35 pm)

Instructor Title and Name: David Nichols
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Office Location and Office Hours: MWF 11:00 am - 12:00 pm Rohr Science 278 (or 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 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

PHE: The Department of Physics & Engineering provides strong programs of study that aid in ensuring our students are well prepared for both graduate studies and careers in a variety of scientific and engineering fields. We emphasize a collaborative learning environment that allows students to thrive academically, build personal confidence, and develop interpersonal skills, while providing a Christian setting for students to learn values and judgment and pursue integration of modern scientific knowledge and Christian faith.

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 culture.

Course Description

PSC 1012 Physical Science - Physics for Teachers (GE) (2 Units)

An introductory survey of selected principles in physics with a discussion of related societal and environmental issues. This course focuses on topics necessary for the California multiple-subject teaching credential (K-8). Letter grade.

Pre or Corequisite(s): MTH 1013 or equivalent.

Both PSC 1012 and PSC 1022 must be taken in order to satisfy the GELO1 requirement. Offered as a quad course.

Program and Course Learning Outcomes

1. Explain observations of the natural world in terms of physics,
2. Translate the description of problems into the equations required to solve them using relevant physical principles,
3. Find solutions to problems once appropriate equations or techniques are identified,
4. Create and interpret graphical representations of quantities,
5. Recognize appropriate teaching techniques to convey scientific ideas and practices,
6. Develop content expertise in the "Physical Science Disciplinary Core Ideas" described in the Next Generation Science Standards

General Education Learning Outcomes

The GE Learning Outcome assessed in this class is: GELO 1e. Quantitative Reasoning: Students will be able to solve problems that are quantitative in nature.

The Signature Assignment for assessing this GELO is: Questions on the Final Exam

Required Texts and Recommended Study Resources

Students are responsible for having the required course textbooks prior to the first day of class.

- *Conceptual Physical Science*, 6th Edition, by Hewitt, Suchocki, and Hewitt.,

- https://www.pearson.com/en-us/subject-catalog/p/conceptual-physical-science/P200000006948/9780134857107

- A scientific calculator

- Something to write on (and something to do the writing)

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 2 unit class delivered over 7 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 75 total hours meeting the course learning outcomes.

Assessment and Grading

Graded Components

 Homework: Hand-written homework is submitted at the beginning of class. Late submissions will not be accepted for credit, however work turned in during business hours after the start of class on the day it is due is eligible for half credit. The lowest homework score will be dropped.

 Quizzes & in-class assignments: In-class work will allow you an opportunity to practice material learned in class. Quizzes and in-class assignments cannot be made up; however, the lowest quiz grade will be dropped. Participation will be included in this grade.

 Presentation: Students will present physical science concepts targeted at K-8 grade levels in groups.

 Examinations: These will include problems and questions over material assigned in the text, readings and handouts, as well as material presented in class. A score of zero will be assigned for an examination that is missed without prior consent or a well-documented emergency beyond your control.

Graded Component	Percent of grade
Homework	10%
Quizzes and in-class assignments	25%
Presentations	10%
Midterm Exam	25%
Final Exam	30%
Total	100%

Grades are based on the number of points accumulated throughout the course. A student must pass at least the midterm exam or the final exam in order to pass the class. That is, a score of 60% must be achieved on one of the exams, or else the final grade will be an F regardless of all other point totals. Grades will not be rounded automatically. Note that the lower portion of the range is

inclusive, while the upper end of the range is exclusive. So, 87.5% is a B+ while 90.0% is an A-. Approximate minimum percentages required to obtain a given grade are as follows:

Grade Scale Based on Percentages

A	B	C	D	F
	B+ [87.500-90.000)	C+ [77.500-80.000)	D+ [67.500-70.000)	
A [92.500-100]	B [82.500-87.500)	C [72.500-77.500)	D [62.500-67.500)	F [0-60.000)
A- [90.000-92.500)	B- [80-82.5)	C- [70-72.5)	D- [60-62.5)	

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.

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.

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.

Use of Technology

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

Please don't use your laptops during class, unless we are doing a task that explicitly requires them. You may use tablets to take notes or follow along with the slides, but not laptop computers.

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 619-849-2533). 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. Professors are able to view a student's approved accommodations through Accommodate.

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 assure 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 accommodations.

Additional Course Information

Additional PLNU policies and practices that apply to this course can be found at the following link: https://docs.google.com/document/d/11BgAANLOJ9tjt837d24EZ181ukM2qzHF/edit

Assignments At-A-Glance

Assignments will be posted to Canvas.

LomaBooks Instructions for Students

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 pick up 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: HERE