



Physics and Engineering

School of STEM

PSC1023 Earth and Space Science for Teachers

3 Units

Spring 2026

Meeting days/times WF 2:45-4:00 pm

Meeting location Latter Hall 001

Final Exam: Wednesday 5/6 1:30-4:00 pm

Instructor: David Nichols

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Office Location and Office Hours:

RS278 – WF 1:00-2:30 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

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

PSC1023 Earth and Space Science for Teachers (3)

An introductory survey of the disciplines of geology, oceanography, meteorology, and astronomy with discussion of philosophical and societal issues. This course focuses on topics necessary for the California multiple subject teaching credential (K-8).

Prerequisite(s): PSC 1012 and PSC1022

Program and Course Learning Outcomes

This course builds upon the foundation of Physical Science. Upon completion of this course you should be able to:

1. Explain observations of the natural world in terms of chemistry and physics,
2. Develop content expertise in the "Earth & Space Science" described in the Next Generation Science Standards, and supporting "Physical Science" content (and the content from PSC1012 and PSC1022). Note that the focus of this course is science content and not teaching methods.
3. To become familiar with the nature of scientific and analytical thinking within the framework of a liberal arts education.

Required Texts and Recommended Study Resources

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

All supplemental materials posted on this course site (including articles, book excerpts, or other documents) are provided for your personal academic use. These materials may be protected by copyright law and should not be duplicated or distributed without permission of the copyright owner.

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 with/on

Computer access to complete assignments in Canvas and do other activities.

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 3-unit class delivered over fifteen 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 113 total hours meeting the course learning outcomes.

Assessment and Grading

Graded Components

- **In-Class Explorations:** Various activities completed in class and turned in on paper at the end of the class session. They may not be submitted after class unless your absence is an officially excused one. Your two lowest scores will be dropped.
- **Homework:** You may work with other people on your homework, but each individual will be responsible for writing up the entire homework assignment and turning it in. Homework should be hand written on paper and is due at the start of class on the days specified.
- **Pre class questions:** Brief online questions to help focus thoughts on the next meeting. They are due by 9 am the day of lecture, submitted on Canvas. If the response is submitted between 9 am and the start of class you will receive half credit
- **Extra Credit:** Earth observations project (optional, extra-credit), this can add points up to 5% of the course grade.
- **Examinations and the Final Examination.** 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. In that case, the make-up exam will take place at 8:30 AM on the Saturday before final exams (May 2, 2026). A score of zero will be assigned for an examination that is missed without prior consent or a well-documented emergency beyond your control.

Point Distribution:

In Class Explorations	25%
Homework	10%
Preclass questions	5%
Extra Credit	(5%)
Exams (2)	30%
Final Exam	30%
Total	100%

Grading Scale

Grades are based on the number of points accumulated throughout the course with the following exception. *A student must pass at least one of Exam I, Exam II, or the Final Exam in order to pass the class.* That is, a score of 60% must be achieved on Exam I, Exam II, or the Final Exam, or else the final course grade will be an F regardless of all other point totals. Final Grades will be based on the following table. 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 minimal percentages required to obtain a given grade are:

Standard Grade Scale Based on Percentages

A	B	C	D	F
	B+ [87.5-90)	C+ [77.5-80)	D+ [67.5-70)	F [0-60)
A [92.5-100]	B [82.5-87.5)	C [72.5-77.5)	D [62.5-67.5)	
A- [90-92.5)	B- [80-82.5)	C- [70-72.5)	D- [60-62.5)	

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.

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.

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, image, problem solutions, equations) 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.

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>

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. If you choose to use LomaBooks, 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](#)

Assignments At-A-Glance

Your assignments will be posted in Canvas.

January 14	Introduction	
January 16	Minerals	20:1-4
January 21	Igneous Rocks & Activity	20:5-7
January 23	Sedimentary/Metamorphic Rocks	20:8-10
January 28	Plate Tectonics	20:1-2
January 30		
February 4		21:3-5
February 6		21:6-8
February 11	r	
February 13	Water	22:1-5
February 18		22:6-8
February 20	Time & Earth History	23:1-3, 8
February 25		
February 27	Geology	Exam #1
March 4	Oceans & Atmosphere	24:1-3
March 6		24:4-5
March 11	<i>Spring Break</i>	<i>No Class</i>
March 14	<i>Spring Break</i>	<i>No Class</i>
March 18	Circulation & Movement	24:6-7
March 20	Drivers of Weather	25:1=3
March 25		24:4-5
March 27	Presentations #1	
April 1	Weather	Exam #2
April 3	<i>Good Friday</i>	No Class
April 8	Presentations #2	
April 10	Look at the Sky	26:1-2
April 15	Planets	26:3-6
April 17	Stars	27:1-3
April 22	Galaxies	27:4-6
April 24	Structure of Space/Time	28:1-4
April 29		28:5-7
May 1		
May 6	Wednesday: 1:30-4:00	Final Exam