

Lassen Community College Course Outline

PHSC 1 General Physical Science

3.0 Units

I. Catalog Description

A brief introduction to physics, chemistry, geology, and astronomy. Not intended for science majors. This course has been approved for online delivery.

Recommended Preparation: Successful completion of ENGL105 or equivalent multiple measures placement.

Transfers to UC/CSU

General Education Area: A

CSU GE Area: B1

IGETC GE Area: 5A

51 Hours Lecture, 102 Expected Outside Class Hours, 153 Total Student Learning Hours

Scheduled: Fall, Spring

II. Coding Information

Repeatability: Not Repeatable, Take 1 Time

Grading Option: Graded or Pass/No Pass

Credit Type: Credit - Degree Applicable

TOP Code: 190100

III. Course Objectives

A. Course Student Learning Outcomes

Upon completion of this course the student will be able to:

Demonstrate a basic understanding of the language, laws, theories, and processes that are fundamental to physics, chemistry, astronomy, meteorology and geology.

B. Course Objectives

Upon completion of this course the student will be able to:

1. Describe the scientific method.
2. Discuss the concept of experimental error and its impact on data analysis.
3. Use the metric system of measurement and convert between the metric system and other sets of units.
4. Describe the structure of an atom including nuclear structure and electron configuration.
5. Use the periodic table as a source of information about atomic structure and reactivity.
6. Describe the states of matter and their characteristics.
7. Predict physical properties based on molecular structure and polarity.
8. Discuss the laws of thermodynamics.
9. Discuss the hydrologic cycle.
10. Describe the composition and formation of natural resources.
11. Discuss uniformitarianism and the magnitude of geologic time.
12. Discuss the gas laws.
13. Discuss various components of the solar system and universe.
14. Identify and describe lunar phases and eclipses.

15. Describe various factors influencing weather.

IV. Course Content

1. Measurement
2. Motion
3. Force and Motion
4. Work and Energy
5. Heat
6. Waves
7. Wave Effects
8. Electricity and Magnetism
9. Relativity
10. Nuclear Physics
11. The Atom
12. Quantum Mechanics
13. The Periodic Table
14. Compounds, Molecules, and Ions
15. Chemical Principles
16. Chemical Reactions
17. Complex Molecules
18. The Solar System
19. Place and Time
20. The Moon
21. The Universe
22. The Atmosphere
23. Winds and Clouds
24. Air Masses and Storms
25. Weather Forecasting
26. Air Pollution and Climate
27. Geology and Time
28. Rocks and Minerals
29. Internal Processes
30. Surface Processes
31. Land and Water Pollution

V. Assignments

A. Appropriate Readings

Reading in textbook as assigned.

B. Writing Assignments

We will progress at the rate of one chapter per lecture. Each chapter is followed by questions requiring written essay-type answers from the students.

C. Expected Outside Assignments

All text reading and note review is conducted outside of class.

D. Specific Assignments that Demonstrate Critical Thinking

The essay nature of each unit exam is designed to challenge students to analyze and synthesize information presented in the text and during lecture.

VI. Methods of Evaluation

Traditional Classroom Instruction

Each student will be given a syllabus at the start of the class that indicates the evaluation tools to be used in the course. The course may include but not constrained to evaluation tools such as homework, quizzes, examinations, essays, laboratory reports, and presentations.

Correspondence Delivery

Assigned readings, instructor-generated typed handouts, typed lecture materials, exercises and assignments equal to face to face instructional delivery. Written correspondence and a minimum of six opportunities for feedback will be utilized to maintain effective communication between instructor and student.

Online Evaluation

A variety of methods will be used, such as: research papers, asynchronous and synchronous (chat/forum) discussions, online quizzes and exams, posting to online website and email communications.

VII. Methods of Delivery

Check those delivery methods for which, this course has been separately approved by the Curriculum/Academic Standards Committee.

Traditional Classroom Delivery Correspondence Delivery

Hybrid Delivery

Online Delivery

Traditional Classroom Instruction

Term paper (topic choice, thesis statement, outline, bibliography, rough draft, final draft), homework, classroom discussion, essay, journals, lab demonstrations and activities, multiple choice quizzes, and participation.

Correspondence Delivery

Same as face to face with the exception of the desired use of proctored exams and exclusion of participation in classroom activities. Students will be expected to complete assignments and activities equivalent to in-class assignments and activities. Written correspondence and a minimum of six opportunities for feedback will be utilized to maintain effective communication between instructor and student.

Online Delivery

A variety of methods will be used, such as: research papers, asynchronous and synchronous (chat/forum) discussions, online quizzes and exams, posting to online website and email communications.

VIII. Representative Texts and Supplies

Shipman, Wilson, Higgins, Lou; *An Introduction to Physical Science*, 15th edition, 2021, Cengage Learning, ISBN: 9781337616416

IX. Disciplines Assignment

Physical Science – Interdisciplinary: Minimum qualifications for Physical Science – Interdisciplinary: Master’s degree in Physical Science or Master’s in Astronomy,

Chemistry, Earth Science, Geology, or Physics and upper division or graduate course work in at least one other constituent discipline.
Chemistry/Physics/Earth Science

X. Course Status

Current Status: Active

Original Approval Date: 9/4/1990

Revised By: Yuting Lin

Curriculum/Academic Standards Committee Revision Date: 12/07/2021