GAVILAN COLLEGE
5055 Santa Teresa Blvd
Gilroy, CA 95023

Course Outline

COURSE: PSCI 1 DIVISION: 10 ALSO LISTED AS:

TERM EFFECTIVE: Summer 2025 CURRICULUM APPROVAL DATE: 03/11/2025

SHORT TITLE: PRIN PHYS SCIENCE

LONG TITLE: Principles of Physical Science

Units	Number of Weeks	Type	Contact Hours/Week	Total Contact Hours
3	18	Lecture:	3	54
		Lab:	0	0
		Other:	0	0
		Total:	3	54

Out of Class Hrs:	108.00
Total Learning Hrs:	162.00

COURSE DESCRIPTION:

An introduction to the physical sciences for the non- science major. Attention is focused on fundamental laws of nature, their development and relation to the physical world. PREREQUISITE: Skills equivalent to those in an Elementary Algebra course. High school-level reading and writing skills are strongly recommended.

CREDIT STATUS: D - Credit - Degree Applicable

GRADING MODES

L - Standard Letter Grade

REPEATABILITY: N - Course may not be repeated

SCHEDULE TYPES:

02 - Lecture and/or discussion
05 - Hybrid
71 - Dist. Ed Internet Simultaneous
72 - Dist. Ed Internet Delayed

STUDENT LEARNING OUTCOMES:

By the end of this course, a student should:

1. Identify, describe, compare, and contrast the fundamental particles of matter and their role in the structure of an atom.
2. Identify, describe, compare, and contrast position, displacement, speed, velocity and acceleration.
3. Identify, describe, compare, and contrast Newton's laws.
4. Identify, describe, compare, and contrast voltage, current, resistance, electric circuits, and magnetism.
5. Identify, describe, compare, and contrast potential, kinetic, and thermal energy, and the concept of Conservation of Energy.

COURSE OBJECTIVES:

By the end of this course, a student should:

1. Describe and discuss numbers, units, and the Scientific Method.
2. Solve problems using one- and two-dimensional kinematics.
3. Solve problems using Newton's Laws applied to everyday situations.
4. Solve problems using Conservation of Energy applied to everyday situations.
5. Identify, describe, compare, and contrast voltage, current, and resistance.
6. Identify and describe the structure of the atom.
7. Identify, describe, compare, and contrast the different types of atomic bonding.
8. Identify the various structural components of the universe: sun, moon, earth, planets, stars, and galaxies.
9. Identify and describe the origin, composition, and structure of a planetary atmosphere.
10. Describe the basic elements of Plate Tectonics Theory.
11. Identify and describe the nature of minerals and major rock-forming minerals.

COURSE CONTENT:

Curriculum Approval Date: 03/11/2025

3 LEC HOURS

TOPICS: Introduction to numbers, units, and the scientific method.

1. Significance of accuracy of numbers, systems of units, and conversion of units.
2. Steps of the scientific method.

6 LEC HOURS

TOPIC: PHYSICS - Kinematics.

1. Vectors and scalars, position, displacement, speed, velocity, and acceleration.
2. One- and two-dimensional kinematics.

6 LEC HOURS

TOPIC: PHYSICS - Newton's Laws.

1. Newton's 1st, 2nd, and 3rd laws.
2. Applications of Newton's laws.

8 LEC HOURS

TOPIC: PHYSICS - Work and Energy.

1. Work, mechanical energy, and thermal energy.
2. Application of these laws.
3. Conservation of Energy applied to everyday situations.

8 LEC HOURS

TOPIC: PHYSICS - Electricity and Magnetism.

1. Voltage, current, and resistance.
2. Simple electric circuits.
3. Conservation of Charge and Conservation of energy.
4. Electricity and magnetism, electric fields and magnetic fields.
5. Gravitational fields, electric fields, and magnetic fields.

12 LEC HOURS

TOPICS: CHEMISTRY - Atoms, Chemical Bonding, and Chemical Reactions.

1. Structure of the atom and the Periodic Table of the Elements.
2. Elements, compounds, mixtures, types and properties of chemical bonding.
3. Common chemical reactions.
4. States of matter.

6 LEC HOURS

TOPICS: ASTRONOMY & METEROLOGY - Solar System, Universe, Atmosphere

1. Structural components of the universe: sun, moon, earth, planets, stars, and galaxies.
2. Size and scale of the solar system, galaxy, and universe.
3. Origin, composition, and structure of a planetary atmosphere.
3. Process of atmospheric circulation and the formation of weather systems.

3 LEC HOURS

TOPICS: GEOLOGY - Plate Tectonics, Minerals, Volcanoes

1. Basic elements of Plate Tectonics Theory.
2. Nature of minerals and major rock-forming minerals.
3. Types of volcanic land forms and processes.

2 LEC HOURS

Final Exam

METHODS OF INSTRUCTION:

Instruction is by lecture, class discussion, lecture demonstration, small group problem solving and homework.

Required Outside Hours 108

Assignment Description

1. Regularly assigned homework that requires students to analyze and study pertinent text material, solved examples and lecture notes.

2. Regularly assigned homework that requires students to apply the principles and skills covered in class by solving related problems.

3. Writing assignments/reports on topics related to physical science.

METHODS OF EVALUATION:

Writing assignments

Evaluation Percent 15

Evaluation Description

Reading Reports

Problem-solving assignments

Evaluation Percent 35

Evaluation Description

Homework Problems

Objective examinations

Evaluation Percent 50

Evaluation Description

Exams

REPRESENTATIVE TEXTBOOKS:

An Introduction to Physical Science, James Shipman, et al., Cengage Learning, 2021 or a comparable textbook/material.

ISBN: 9780357701225

Rationale: A textbook recommended by our PT faculty (who used an earlier edition when the course was offered F2F) that has 5-year recency.

RECOMMENDED MATERIALS:

Conceptual Physical Science, Hewitt, Suchocki, and Hewitt, Pearson, 2016.

ISBN: ISBN-13: 978-0134060491

12 Grade Verified by: Jennifer Nari

ARTICULATION and CERTIFICATE INFORMATION

Associate Degree:

GAV B1, effective 202530

GAV Area 5 = Natural Sci, effective 202530

CSU GE:

CSU B1, effective 202530

IGETC:

IGETC 5A, effective 202530

CSU TRANSFER:

Transferable CSU, effective 202530

Not Transferable

UC TRANSFER:

Transferable UC, effective 202530

Not Transferable

SUPPLEMENTAL DATA:

Basic Skills: N
Classification: Y
Noncredit Category: Y
Cooperative Education:
Program Status: 1 Program Applicable
Special Class Status: N
CAN:
CAN Sequence:
CSU Crosswalk Course Department:
CSU Crosswalk Course Number:
Prior to College Level: Y
Non Credit Enhanced Funding: N
Funding Agency Code: Y
In-Service: N
Occupational Course: E
Maximum Hours:
Minimum Hours:
Course Control Number: CCC000225966
Sports/Physical Education Course: N
Taxonomy of Program: 190100