

## COLLEGE OF THE CANYONS

### GENERAL COURSE INFORMATION

1. **Subject Code:** PHYSCI
2. **Course Number:** 101
3. **Course Title:** Physical Science
4. **Effective Date:**
5. **Discipline:**

Physical Sciences - Masters; or  
 Chemistry-Masters; or Physics-Masters; or  
 Engineering-Masters.

6. **Semester of First Offering:**

### SECTION D

**Articulation Information:** (Required for Transferable courses only)

1.
  - CSU Transferable.
  - UC Transferable.
  - CSU/UC major requirement.  
If CSU/UC major requirement, list campus and major.
  
2. List one community college and its comparable course. If requesting CSU and/or UC transferability also list a CSU/UC campus and comparable lower division course.
  - [Moorpark College PHSC MO1 Principles of Physical Science](#)
  
  - [Mt. San Antonio College PHSC 7 Physical Science](#)

### SECTION E

#### Resources:

Please consider the identified concerns below:

1. **Library:** Please identify the implications to the library
  
2. **Computer Support Services:** Please identify the implications to Computer Support Services:
  
3. **TLC Lab :** What are the implications to the TLC lab of this course being offered?

### SECTION H

#### General Course Information

**1. Units: 4.0****Variable units n/a**

(\*Units of credit are based on: 1 unit of credit per one hour of lecture (plus 2 hours of outside class independent study); 1 unit of credit per three hours of activity or lab.)

**2. This Course is:**

Associate Degree Applicable - CSU transferable

**3. Cross-List:****Course Format and Duration****4. Maximum Contact Hrs per Term**

Lecture/Discussion: 54

Lab: 54

Activity:

By Arrangement:

**Total Maximum Contact Hrs per Term 108 - 0****5. Short Term Total Hrs**

Lecture/Discussion:

Lab:

Activity:

By Arrangement:

**Total Hrs****Methods of Instruction****6. Check all instructional methods used to present course content.** Lecture Activity Discussion Seminar Distance Ed (requires supplemental form) Lab Work Experience Directed Study Tutoring

Other:

**Course Preparation – (Supplemental forms required)**

**7a. Prerequisite(s):** (Course and/or other preparation/experience that is REQUIRED to be completed previous to enrollment in this course.)

None

**7b. Co-requisite(s):** (Courses and/or other preparation that is REQUIRED to be taken concurrently with this course.)

None

**7c. Recommended:** (Minimum preparation RECOMMENDED in order to be successful in this course. Also known as "Course Advisory".)

Strongly recommend completion of Intermediate Algebra-Math 070 or concurrent enrollment in Intermediate Algebra.

**Catalog Description And Other Catalog Information****8. Repeatability:**

Not Repeatable

Please Note: 8. (Repeatability) does not refer to repeating courses because of substandard grades or a lapse of time since the student took the course. A course may be repeated only if the course content differs each time it is

offered and the student who repeats it is gaining an expanded educational experience as stipulated in *Title V*.

- Skills or proficiencies are enhanced by supervised repetition and practice within class periods.
- Active participatory experience in individual study or group assignments is the basic means by which learning objectives are attained.
- Course content differs each time it is offered.

Explanation for above repeatability selection:

#### 9a. Catalog Description:

Introduces the non-science major to a survey of chemistry and physics. Includes mechanics, heat, light, sound, motion, magnetism, electricity, light atomic structure, chemical bonding, chemical reaction rates and equilibrium. Emphasizes basic principles, relationships, status and their practical applications. Topics are developed with a minimum of mathematical presentation. UC credit limitation: No credit if taken after a college level course in Physics or Chemistry.

**9b. Class Schedule Description:** (One or two sentences describing course content for the prospective student. Does not require as much detail as the Catalog description.)

Introduces the non-science major to a survey of chemistry and physics. UC credit limitation: No credit if taken after a college level course in Physics or Chemistry.

**9c. Grading Option:** LR - Letter Grade Only

#### Course Outline Information

**10. Student Learning Outcomes:** (Outcomes for **all** credit courses must indicate that students will learn critical thinking and will be able to apply concepts at college level. Outcomes must be related to Catalog Description, Course Content, and Objectives.)

**The student will be able to:**

Analyze the general principles and methods of scientific inquiry including fundamental concepts of both chemistry and physics.

**Objectives:**

1. Describe the basic atomic structure including the relationships between fundamental particles, the individual elements, and the Periodic Table.
2. Differentiate between the characteristics of the atomic, ionic, and molecular classes of matter.
3. Analyze the states of matter and associated phase changes.
4. Distinguish between the basic characteristics of solutions, including acids, and bases, and their relationship to the pH scale.
5. Explain the nature of heat (thermal energy) and heat transfer (conductive, convective, radiant) and their relationship to temperature and temperature measurement.
6. Explain the basic principles of chemical bonding and chemical reactivity.
7. Describe electromagnetic radiation (light), the electromagnetic spectrum and sources of light, with emphasis on wave phenomena including reflection and refraction.
8. Analyze the basic forces in the universe, including electrostatic, gravitational, magnetic, and frictional.
9. Explain and define forms of energy, including solar, chemical, electrical, magnetic, nuclear, and thermal.
10. Differentiate motion of objects as related through the concepts of position, displacement, speed, velocity, and acceleration.
11. Discuss simple machines, allowing movement of heavy objects by means of the application of small forces over long distances, utilizing levers, pulleys, and ramps, to do work.
12. Compare and contrast renewable and non-renewable natural resources and their use in society

**11. Course Content Outline:** (Provides a comprehensive, sequential outline of the course content, including all major subject matter and the specific body of knowledge covered.)

Observations, Data, Scientific Method

Motion

Heat

Electricity and Magnetism

Light & Waves

Atoms, Elements, Compounds, States of Matter

Chemical Bonds

Chemical Reactions

Organic Chemistry

Radioactivity

**12. Methods of Evaluating Student Achievement:** (All courses must provide for measurement of student performance in terms of stated student performance objects, Area 10, and culminate in a formal recorded grade based on uniform standards. Submit at least 2 examples.)

Short Answer Tests

Problem Solving

Skill Demonstration

**13. Typical Assignments:** (Credit courses **require** two hours of independent work outside of class per unit of credit for each lecture hour. List types of assignments, including library assignments.)

**a. Reading Assignments:** (Submit at least 2 examples)

Textbook

Periodicals

**b. Writing, Problem Solving or Performance:** (Submit at least 2 examples)

Research projects.

Oral reports.

**c. Other** (Terms projects, research papers, portfolios, etc.)

Conceptual exercises of both qualitative and quantitative nature. Physical and computer stimulated laboratory exercises.

**14. Required Materials:**

**a. EXAMPLES of typical college-level textbooks (for degree-applicable courses) or other print materials.**

Book 1:

Author: Hewitt

Title: Conceptual Physical Science

Publisher: Addison Wesley

Date of Publication: 2004

Edition: 3rd