

SOUTHEAST COMMUNITY COLLEGE
DIVISION OF ARTS AND SCIENCES
Sciences
Revision Date: 07-01-25

I. CATALOG DESCRIPTION

Course Number: PHYS1100
Course Title: Physical Science
Prerequisite(s): None
Catalog Description: A survey course in the physical sciences with emphasis on scientific processes and problem solving. Areas of study will include selected topics in physics, chemistry, astronomy, geology and meteorology. A scheduled laboratory will supplement classroom activities.
Credit Hours: 4.0
Class Hours: 45
Lab Hours: 30
Contact Hours: 75

II. COURSE OBJECTIVES: *Course will:*

- A. Develop skills in measuring and converting units within the metric systems
- B. Foster critical thinking skills using the scientific method in examining physical science concepts
- C. Relate scientific issues to societal and individual problems
- D. Relate basic physical science concepts to every experiences
- E. Explain basic chemical principles
- F. Describe the basic structure, features, and workings of the solar system and universe
- G. Explain basic weather principles
- H. Describe the dynamic nature of Earth and its cycles

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

- A. Student Learning Outcomes: *Student will be able to:*
 - 1. Demonstrate knowledge of different types of measurements and units such as CGS and MKS (SI).
 - 2. Demonstrate knowledge of measurements in different systems and co-relate them.
 - 3. Solve problems relating to Newton's Laws of Motion and Gravitation.
 - 4. Evaluate situations involving momentum, energy, and their conservation principles.
 - 5. Demonstrate knowledge of how physical changes affect the environment.
 - 6. Describe available energy resources and how they affect global climate changes.
 - 7. Describe heat flow relative to temperature.
 - 8. Demonstrate knowledge of electricity including magnetic fields and various phenomena.
 - 9. Demonstrate knowledge of chemical bonds and the properties of substances.
 - 10. Identify the characteristics of elements based on the periodic table.
 - 11. Demonstrate knowledge of the uniform circular motion and elliptical motion with regard to the motion of celestial objects.
 - 12. Describe the components of the solar system.
 - 13. Demonstrate knowledge of weather fronts and systems.
 - 14. Explain the seasonal changes in weather patterns.
 - 15. Demonstrate knowledge of the basic structures of a dynamic earth.
 - 16. Demonstrate knowledge of the components of earth materials.
- B. General Education Learning Outcomes
 - 1. GELO #3: Critical Thinking & Problem Solving
Critical thinkers have the ability to evaluate a problem or assumption and determine an appropriate course of action. They use reason and evidence to make judgments and decisions. Critical thinking and problem solving skills rank highly among employer

expectations.

Outcome: Collect, identify, interpret and analyze data.

Outcome: Synthesize information to arrive at reasoned solutions to problems.

2. GELO #5: Analytical, Quantitative, and Scientific Reasoning

A primary way of knowing and making sense of our world comes from the analysis of quantitative and scientific information. SCC students will have developed the ability to examine problems or issues by evaluating evidence, analyzing relationships between variables, and developing and communicating conclusions.

Outcome: Understand and create logical arguments supported by quantitative and scientific evidence and communicate those arguments in a variety of formats.

Outcome: Manipulate formulas, data sets, graphs, tables, etc. in a way to produce a meaningful outcome.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)

- A. Physics
- B. Chemistry
- C. Meteorology
- D. Geology
- E. Astronomy

V. INSTRUCTIONAL MATERIALS

- A. Required Text(s):
 - 1. Tillery, William, *Physical Science*, 11th ed, McGraw-Hill. ISBN: 9781260265283.
 - 2. Web Assign Access code (can be purchased in the bookstore or online).
- B. Other resources:
 - 1. Protractor
 - 2. Calculator (with square root)
 - 3. Safety-glasses or goggles

VI. METHODS OF PRESENTATION AND INSTRUCTION

- A. Methods of presentation typically include a combination of the following:
 - 1. Lecturing
 - 2. Discussion groups
 - 3. Individual and/or collaborative projects
 - 4. Debates, research, peer response, journals, essays, conference
 - 5. Computer-assisted instruction, interactive/creative methods, multi-media
 - 6. Field trips
 - 7. Online

VII. METHODS OF EVALUATION

- A. Methods of evaluation typically include a combination of the following:
 - 1. Class and group participation
 - 2. Daily work, exams, presentations
 - 3. Projects, papers, and/or a portfolio
- B. SCC GRADING SCALE

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

VIII. SPECIFIC COURSE REQUIREMENTS

- A.** Students are expected to organize a notebook and keep written assignments, reports, quizzes, and tests in order.
- B.** Lab activities and reports are expected to be completed on time.