PSCI 101 Fundamentals of Physical Science

Credit Hours: 4

Scheduled hours per week

Lecture: 3
Lab: 2
Other: N/A

Catalog Course Description: Introduction to the basic concepts of physics, chemistry, geology, oceanography, meteorology, and astronomy. Scientific data collection and analysis will be stressed in lab.

Pre-requisites: N/A

Co-requisites: 101L Fundamentals of Physical Science Laboratory

Course Learning Outcomes:

- Ability to demonstrate critical thinking by analyzing data to infer logical conclusion.
- Ability demonstrate and practice the scientific method of investigation of a problem or idea.
- Ability to collect accurate scientific data by practicing accurate data collecting techniques.
- Practice experimentation and/or observation of nature in order to evaluate scientific questions or scientific problems.
- Ability to analyze data by using graphing and other techniques to infer general trends in data and make inductive inferences.
- Ability to make hypothetical-deductive predictions relative to scientific concepts and understand how to test those predictions.
- Capability to correctly practice the steps involved in solving problems with the scientific formulas.
- Ability to take measurements and do calculations using the basic metric system of measurement.
- Ability to express numbers in scientific notation and perform calculations using numbers expressed in scientific notation.
- Ability to understand demonstrate, and analyze principles, laws, and theories of physics and chemistry.
- Ability to understand, demonstrate, and analyze the fundamental principles, laws, and theories of physics and chemistry.
- Ability to understand, demonstrate, and analyze the fundamental principles, laws, and theories of geology, oceanography, meteorology, and astronomy.
- Objectively evaluate and suggest possible solutions to problems relative to the Earth's environment, resources, and environmental issues.
- Demonstrate an understanding of Earth's origin, history, composition, and internal and external process.
- Demonstrate an understanding of Earth's atmosphere and its relation to climate and water.
- Demonstrate an understanding of the relationship of Earth to the Universe as a whole.

Topics to be studied:

- Newton's universal laws, laws of motion, and momentum
- Work, heat and temperature
- Nuclear reactions
- Sound and light
- Electricity
- Molecular structures, chemical bonds and reactions
- Water chemistry and organic chemistry

- Rocks and minerals
- Weathering and erosion, running water and groundwater
- Glaciers and deserts
- Plate tectonics, volcanic activity, earthquakes, and mountain building
- Geologic time, relative and radiometric dating techniques
- Structural geology, geologic and topographic maps,
- Earth resources and environmental issues
- Origin of the earth and solar system.

Relationship of Course to Program or Discipline Learning Outcomes:

Relationship of Course to Science Learning Outcomes:	
Students will learn the process and reasoning behind the Scientific Method and be able to conduct experiments that meet the requirements of the model.	X
Students exhibit the basic safety-related rules and regulations of working in the lab.	X
Students be able to recount the basic safety tenants associated with a specific scientific discipline.	X
Students will become proficient at Science Writing.	X
Students will recognize and identify the applications of their specific discipline in the 'real world.'	X
Students will accurately recount important milestones in the history of scientific inquiry in their discipline.	X
5/3/2016	

Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	X
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	X
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	X
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	X

The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	X
5/3/2016	

Special requirements of the course:

N/A

Additional information:

N/A

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