PSCI 111 Introduction to Physical Science

Credit Hours: 4

Scheduled hours per week

Lecture: 3
Lab: 2
Other: N/A

Catalog Course Description: An introduction to the basic concepts of science and scientific methods and the essentials of physics and chemistry. Topics covered include forces, motion, heat, sound, electricity, magnetism, light, atomic structure, chemical bonding, chemical equations, and chemical applications. Scientific data collection and analysis will be stressed in the laboratory portion of the course.

Pre-requisites: N/A

Co-requisites: 111L Introduction to Physical Science Laboratory

Course Learning Outcomes:

- Ability to demonstrate critical thinking by analyzing data to infer logical conclusions.
- 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.

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

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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Date: 10/20/2017