University of Arkansas − Fort Smith
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General Syllabus

PHSC 2711 Physical Science Laboratory

Credit Hours: 1 Lecture Hours: 0 Laboratory Hours: 2

Prerequisite or corequisite: PHSC 2713 Physical Science

Effective: 2018~2019

I. Course Information

A. Catalog Description

A study in physical science techniques and analyzing physical sciences concepts in the disciplines of physics, chemistry, and astronomy.

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Make measurements and express them with correct mathematical notation.
2. Calculate the work, energy, and power for mechanical forces.
3. Measure quantities associated with heat and temperature.
4. Determine the quantities associated with wave motion.
5. Describe and measure the effects of electricity and magnetism.
6. Describe the relationships of the chemical elements.
7. Describe the features of the moon.

B. University Learning Outcomes Analytical

Physical Science enhances student abilities in the following areas:

Analytical Skills

Critical Thinking Skills: Students will identify a problem or issue and will research, evaluate, and compare information from varying sources in order to evaluate authority, accuracy, recency, and bias relevant to the problems/issues. The student will generate solutions/analysis of problems/issues evaluated and will assess and justify the solutions and/or analysis.

Communication Skills (written and oral)
Students will communicate proficiently. The student will compose coherent documents appropriate to the intended audience and effectively communicate orally in a public setting.

Ethical Decision Making
Students will model ethical decision-making processes. The students will identify ethical dilemmas and affected parties and will apply ethical frameworks to resolve a variety of ethical dilemmas.

Global & Cultural Perspectives
Students will reflect upon cultural differences and their implications for interacting with people from cultures other than their own. The students will demonstrate understanding or application of their discipline in a global environment and will demonstrate how their discipline impacts or is impacted by different cultures.

III. Major Course Topics

A. Introduction to Science (video)
B. Graphs
C. Measurements
D. Uniform Motion
E. Newton's Second Law
F. Centripetal Acceleration and Force
G. Laws of Equilibrium
H. Specific Heat
I. Waves
J. Lenses and Prisms
K. Static Electricity; Magnetism
L. Spectroscopy
M. Oxygen
N. Kepler's Law
O. Constellations and Phases of the Moon