University of Arkansas - Fort Smith
5210 Grand Avenue
P. O. Box 3649
Fort Smith, AR 72913-3649
479-788-7000

General Syllabus

PHSC 10043 Physical Science

Credit Hours: 3 Lecture Hours: 3 Laboratory Hours: 0

Prerequisite: MATH 03174 Beginning and Intermediate Algebra or higher level MATH course or exemption by placement.
Prerequisite or corequisite: PHSC 10041 Physical Science Laboratory

Effective: 2018~2019

I. Course Information

A. Catalog Description

Presents the facts, methods, and significance of the physical sciences by concentration on selected topics from physics, chemistry, and astronomy. (ACTS: PHSC 1004; must have PHSC 2713/2711)

B. Additional Information - None

II. Student Learning Outcomes

A. Subject Matter

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

1. Express the motions of point particles in terms of the force laws.
2. Calculate the work, energy, and power for mechanical forces.
3. Describe and measure the effects of electricity and magnetism.
4. Describe the relationships of the chemical elements.
5. Express the makeup of compounds, molecules, and ions.
6. Discuss the basic chemical principles.
7. Solve simple chemical reaction equations.
8. Discuss the structure of the solar system.
9. Solve time and location problems.

10. Describe the features of the moon.
11. Explain the structure of the universe.

B. University Learning Outcomes

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. Measurement
B. Kinematics of Motion C. Force and Motion
D Work and Energy
E Heat
F Wave Motion
G Lenses and Mirrors
H The Periodic Table of the Elements
I Compounds, Molecules, and Ions
J Some Chemical Principles
K Chemical Reactions
L The Solar System
M Place and Time

N The Moon
O The Universe