

University of Arkansas - Fort Smith
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General Syllabus

PHSC 10043 Physical Science

Credit Hours: 3

Lecture Hours: 3

Laboratory Hours: 0

Prerequisite or Corequisite: MATH 11103 College Math or higher-level math or exemption by placement score.

Initial Catalog:2025-2026

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 10043; must have PHSC 10043/PHSC 10031)

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:

a. Analytical Skills

Critical Thinking Skills Goal: Students will identify problems/issues and develop solutions/analysis.

Communication Skills (written and oral)

Students will communicate proficiently. Students 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. 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. 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